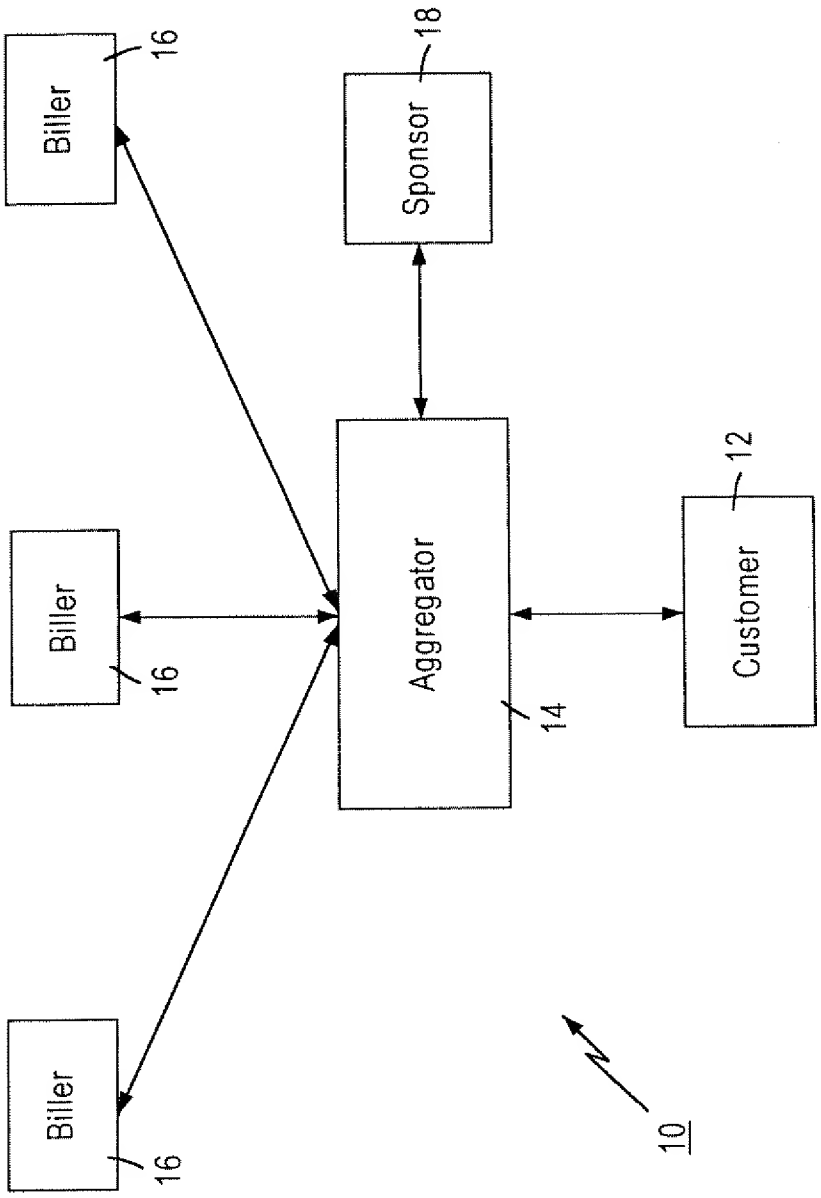

Figure 1 (Prior Art)

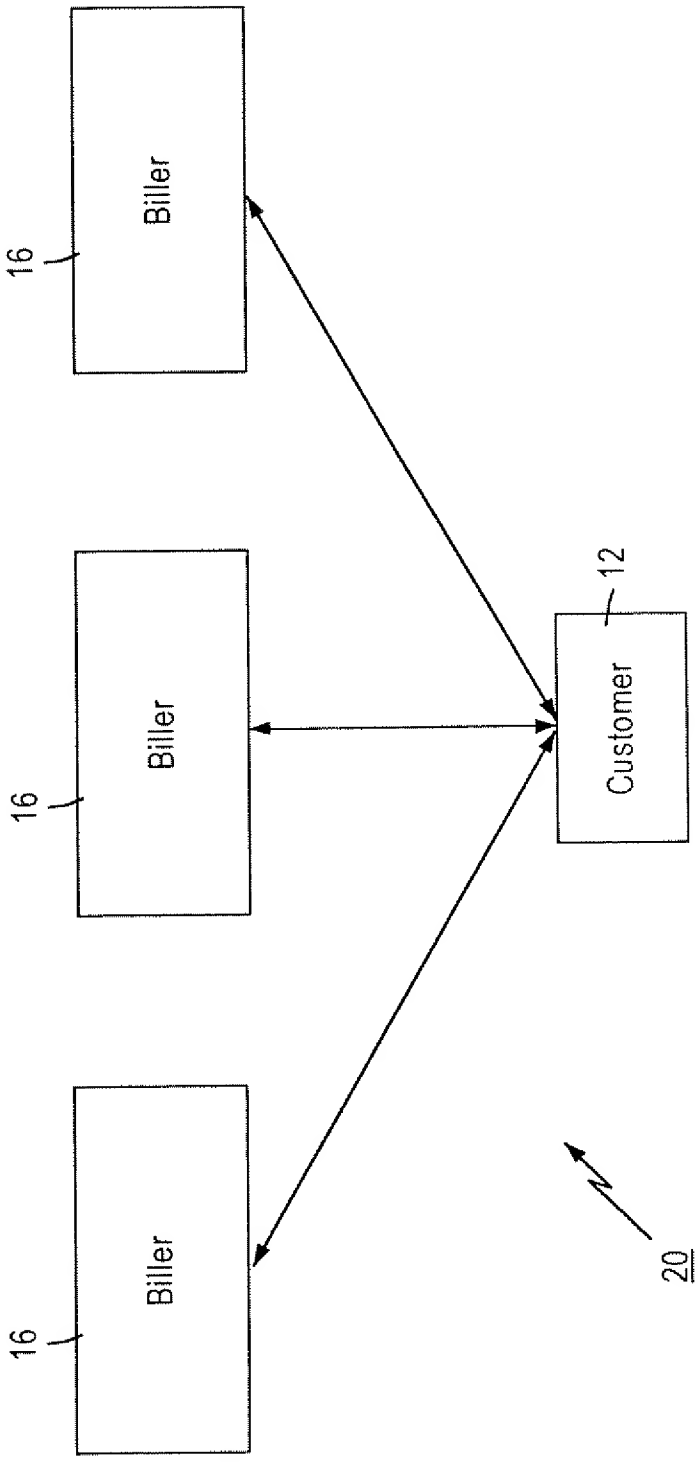

Figure 2 (Prior Art)

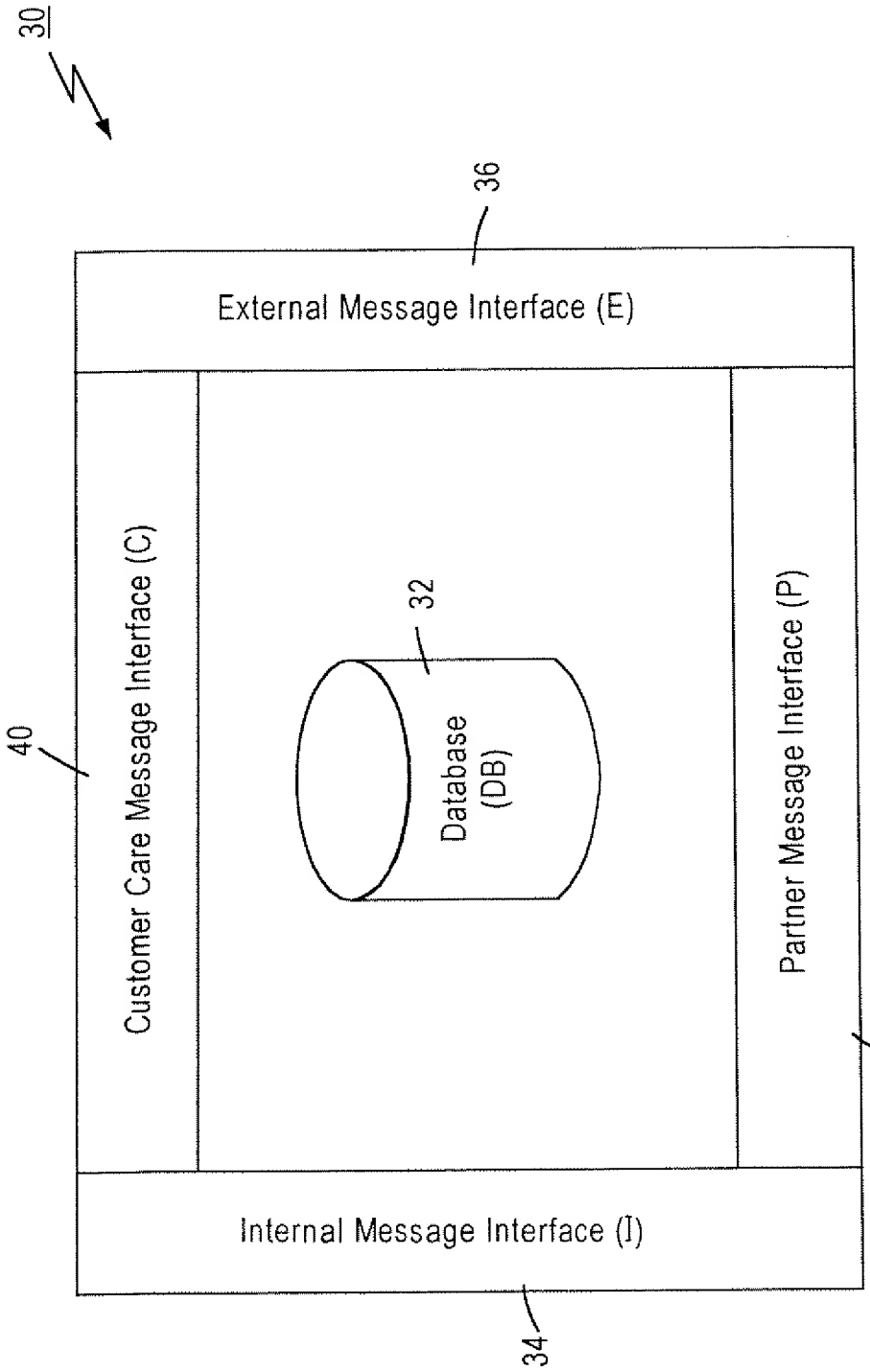
30
36
External Message Interface (E)
Customer Care Message Interface (C)
32
Database
(DB)
Partner Message Interface (P)
40
38
Internal Message Interface (I)
34

Figure 3

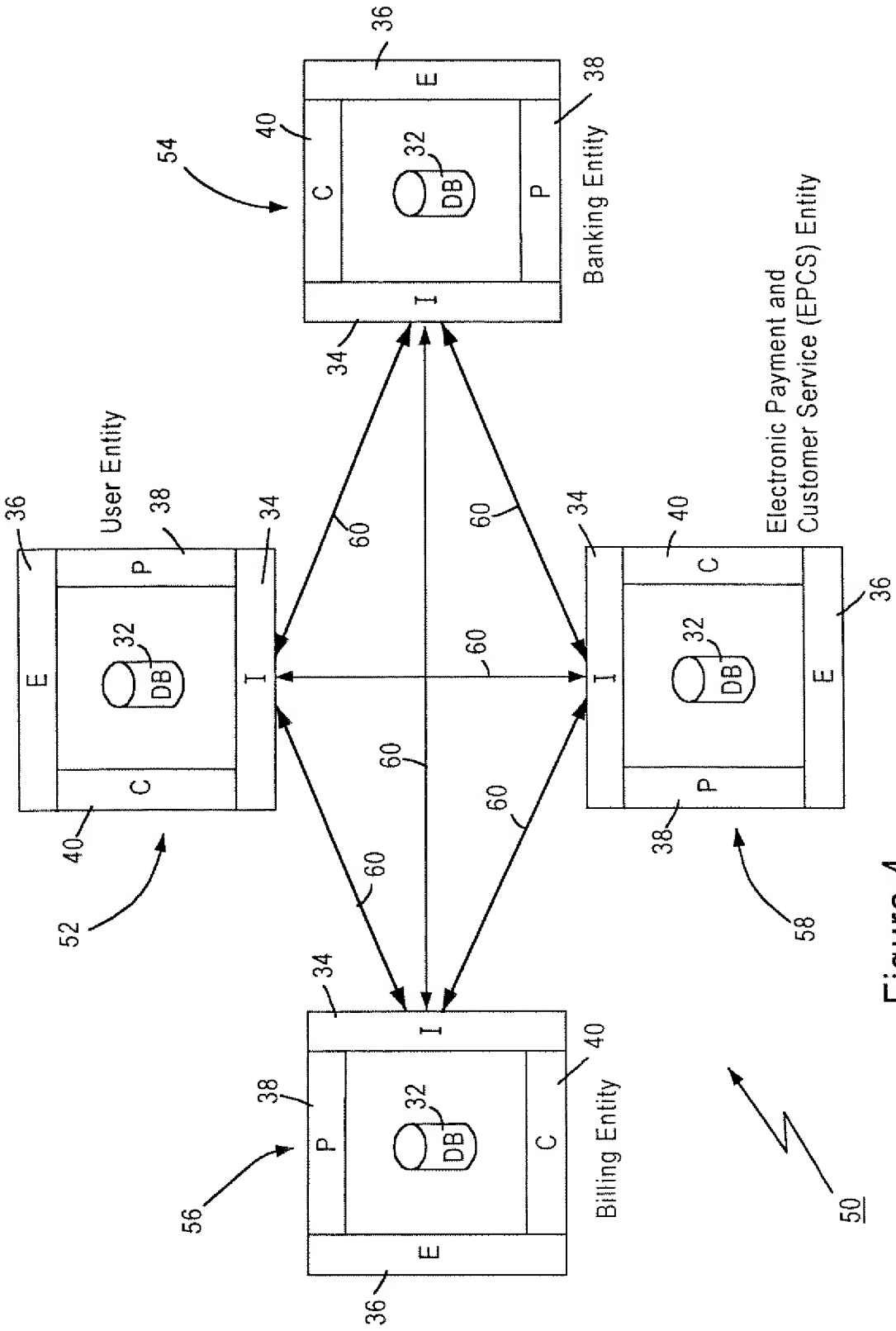
36
E
38
40
C
32
DB
P
54
Banking Entity
I
34
User Entity
60
Electronic Payment and
Customer Service (EPCS) Entity
52
58
56
Billing Entity
50

Figure 4

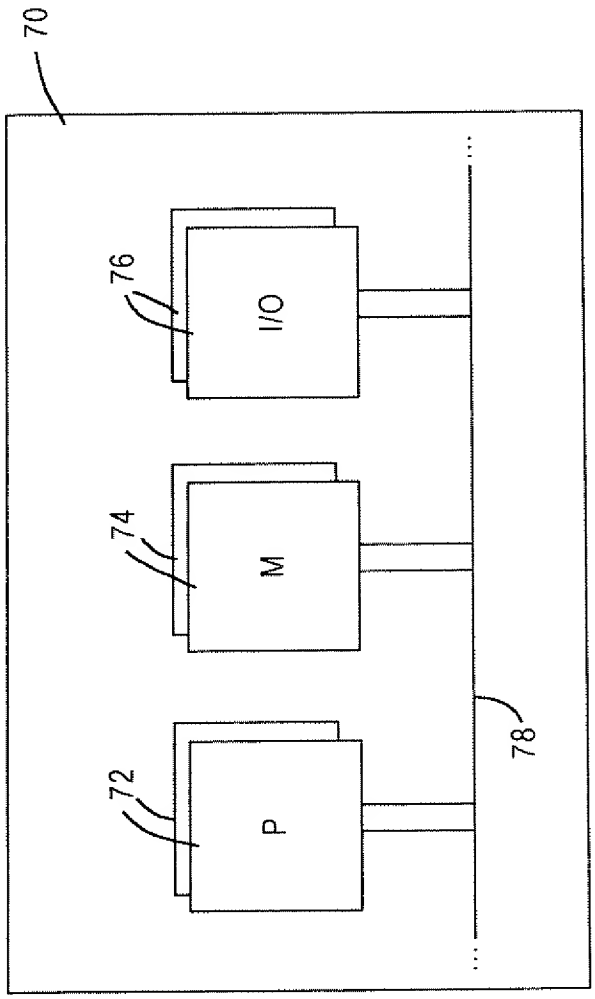

Figure 5

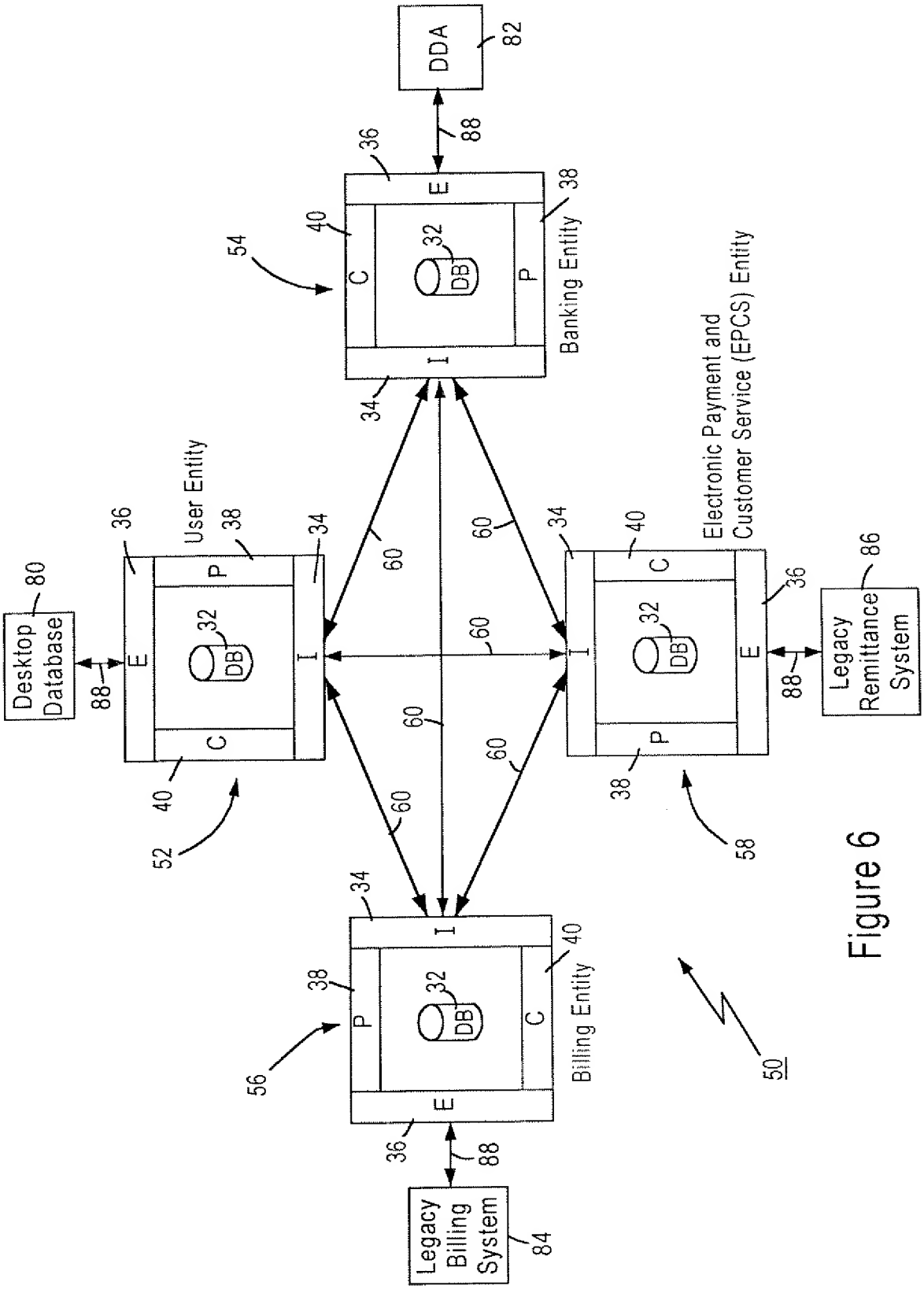
DDA
82
88
36
E
38
40
C
32
DB
P
54
Banking Entity
I
34
60
User Entity
Electronic Payment and
Customer Service (EPCS) Entity
Desktop
Database
80
Legacy
Remittance
System
86
Legacy
Billing
System
84
52
58
56
Billing Entity
50

Figure 6

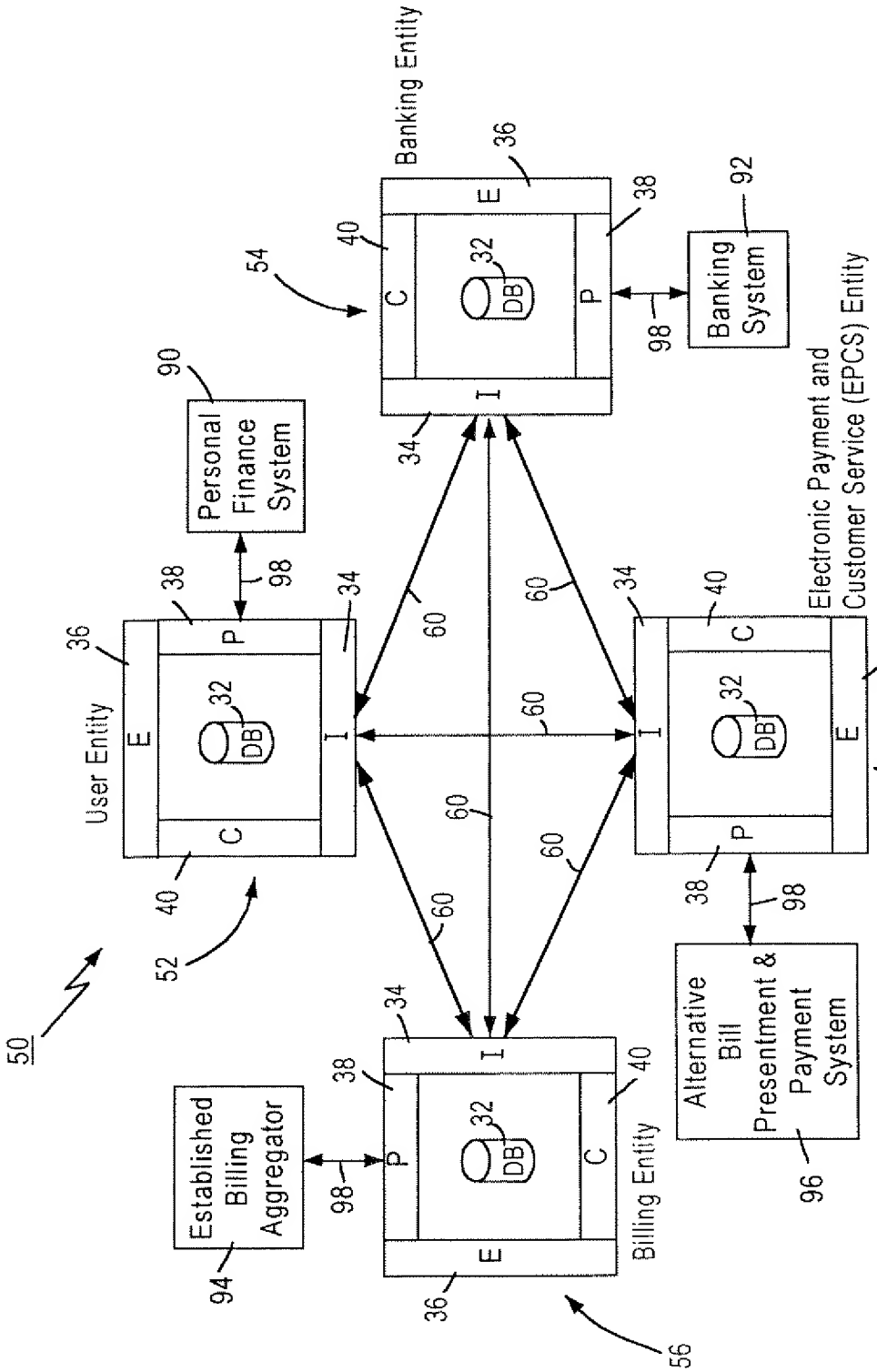
Banking Entity
Banking System
Personal Finance System
User Entity
Electronic Payment and Customer Service (EPCS) Entity
Established Billing Aggregator
Billing Entity
Alternative Bill Presentment & Payment System
DB
E
C
P
I
50
52
54
56
58
60
90
92
94
96
98

Figure 7

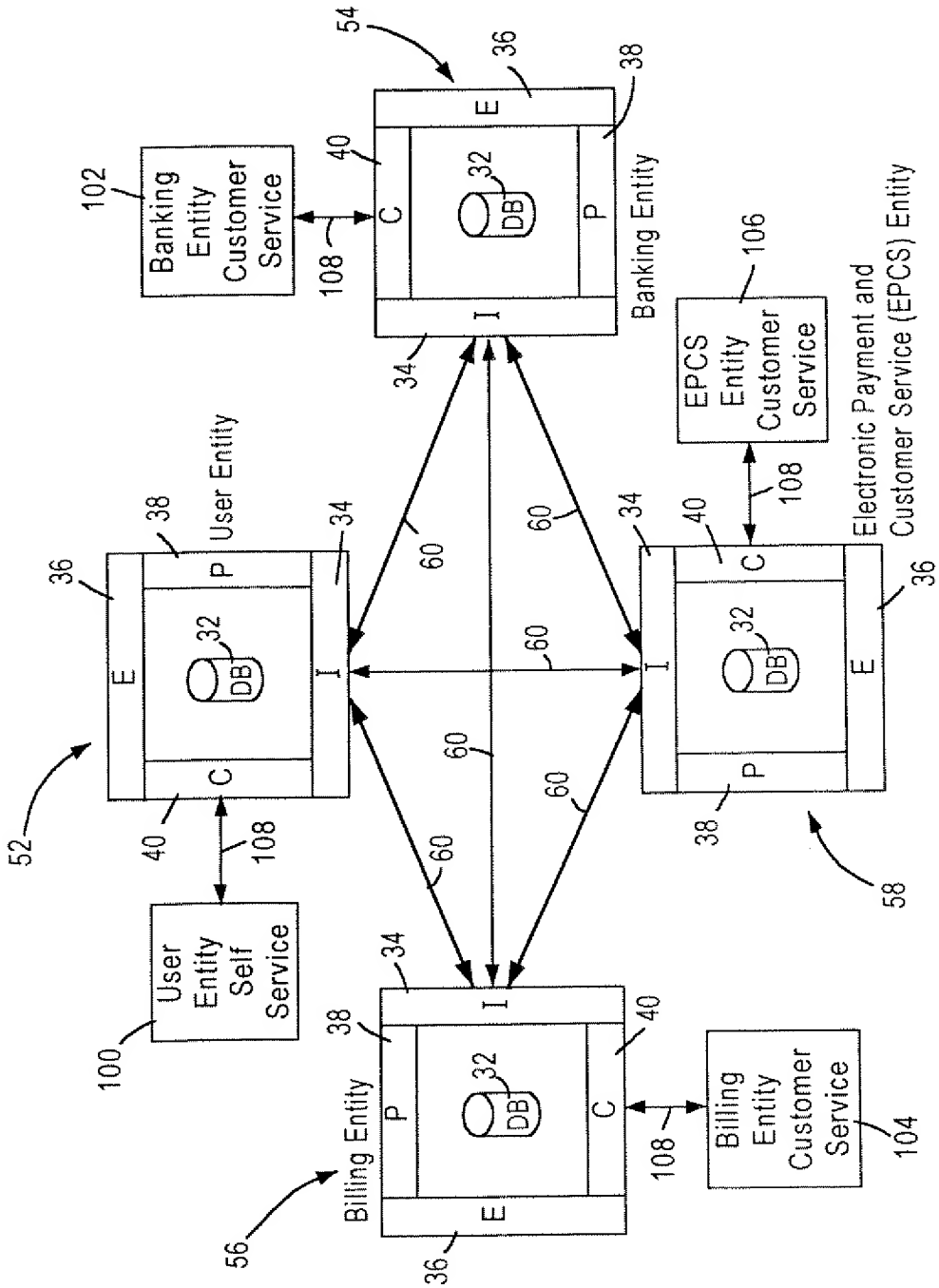
Banking Entity Customer Service
102
Banking Entity
EPCS Entity Customer Service
106
Electronic Payment and Customer Service (EPCS) Entity
User Entity
User Entity Self Service
100
Billing Entity
Billing Entity Customer Service
104
54
52
56
58
50
34
36
38
40
108
60
32
DB
E
I
P
C

Figure 8

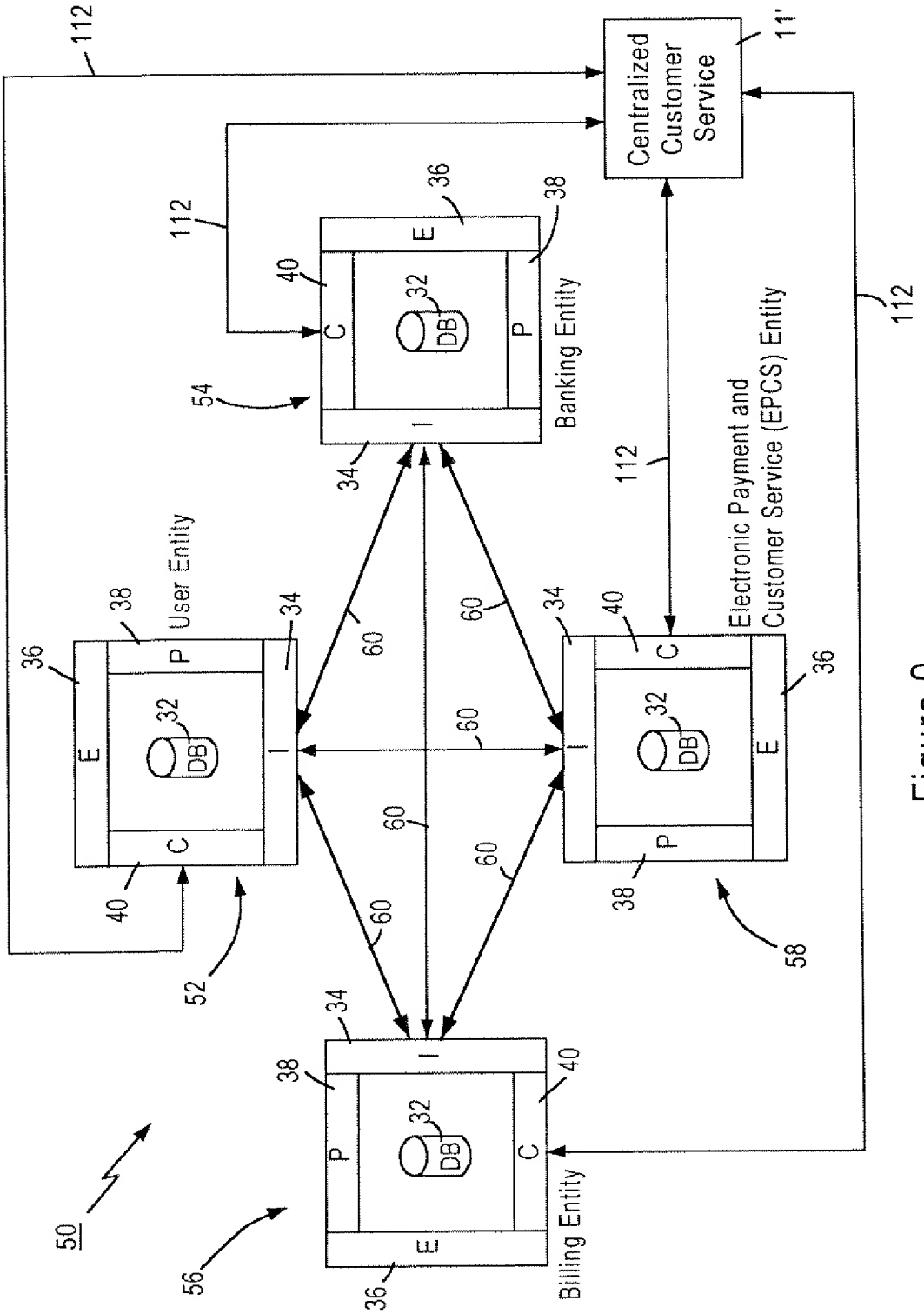
Centralized Customer Service
11'
112
Banking Entity
User Entity
Electronic Payment and Customer Service (EPCS) Entity
Billing Entity
DB
E
C
P
I
32
34
36
38
40
50
52
54
56
58
60

Figure 9

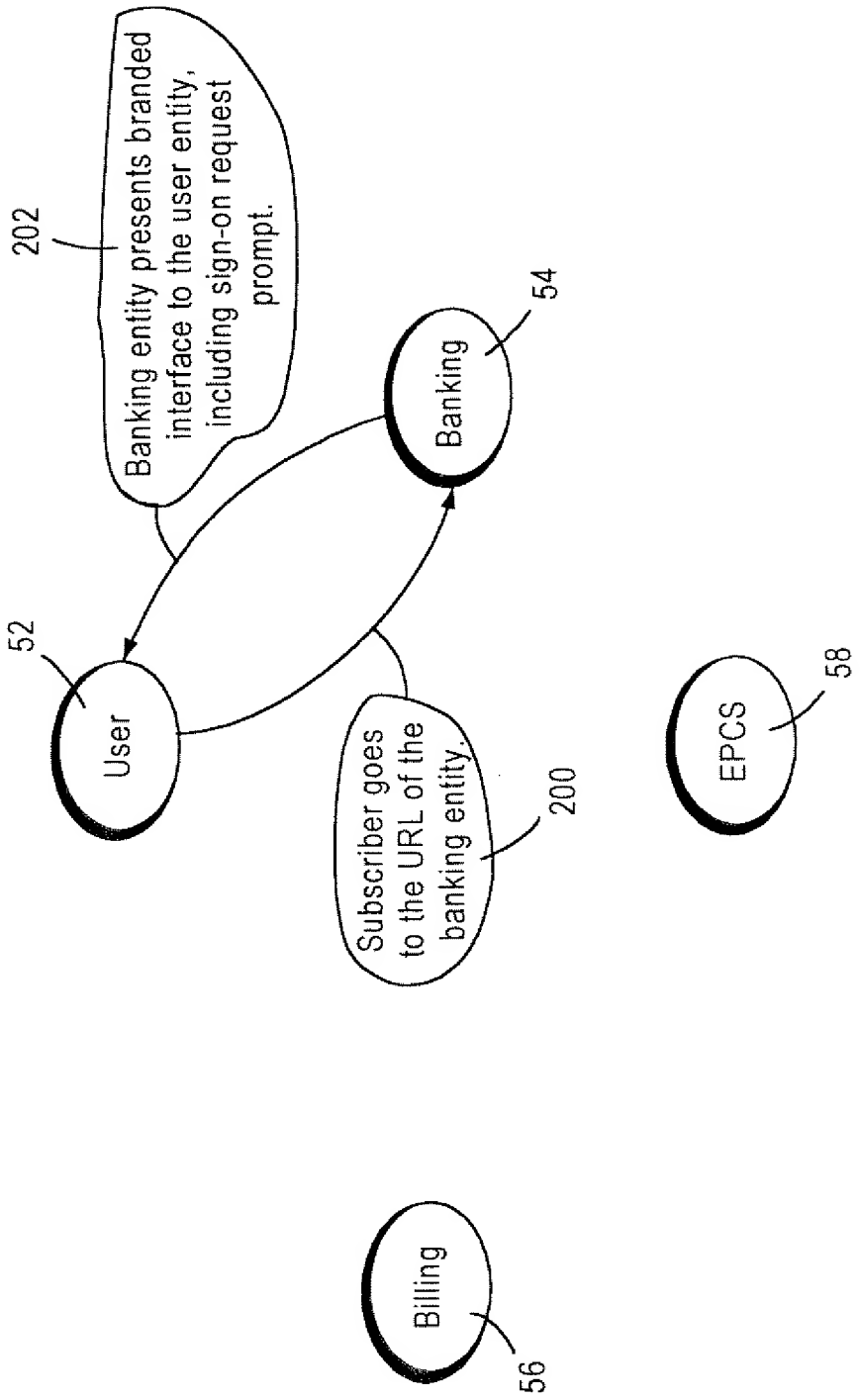
202
Banking entity presents branded interface to the user entity, including sign-on request prompt.
54
Banking
52
User
Subscriber goes to the URL of the banking entity.
200
EPCS
58
Billing
56

Figure 10

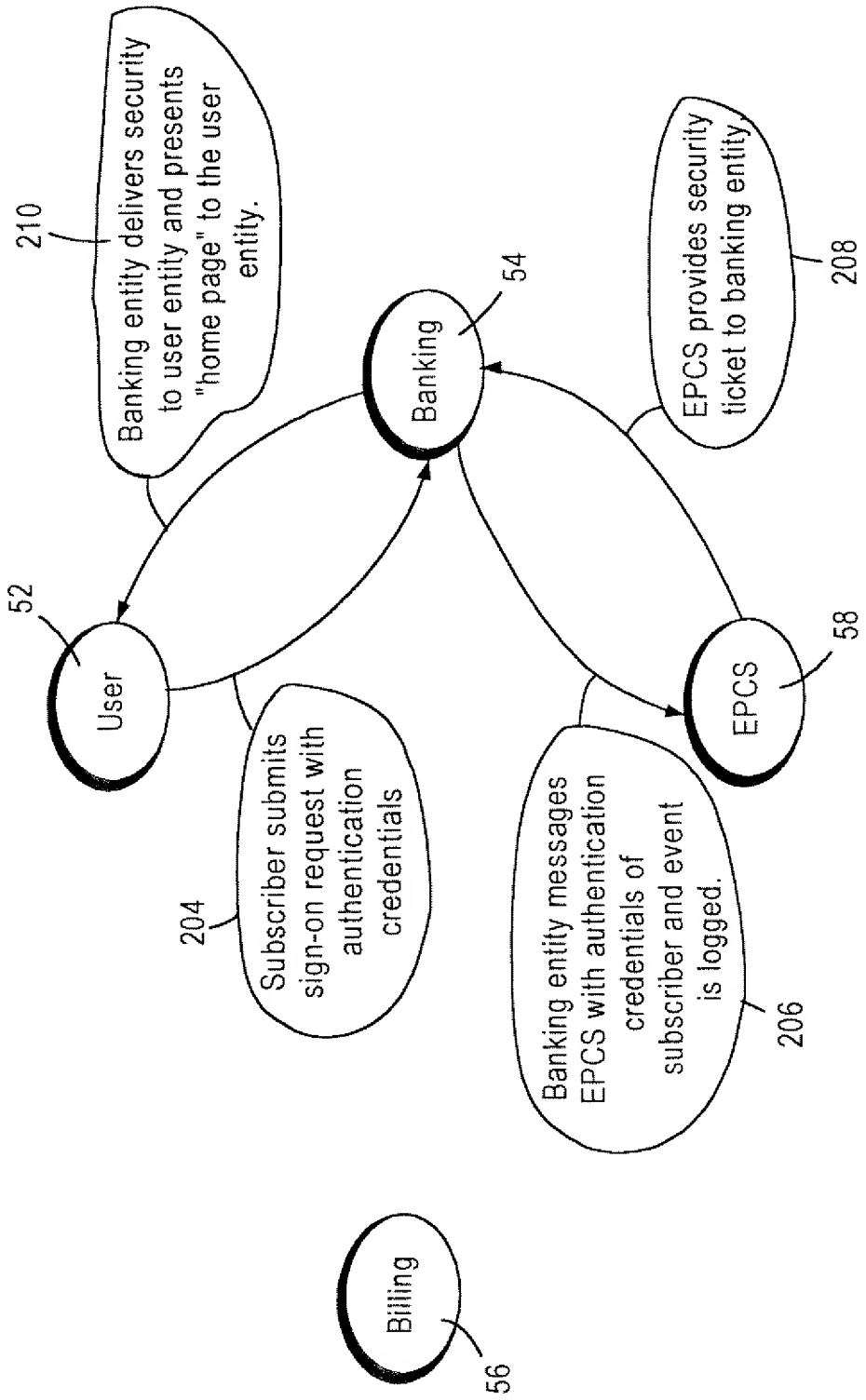
Banking entity delivers security to user entity and presents "home page" to the user entity.
210
Banking
54
EPCS provides security ticket to banking entity.
208
52
User
Subscriber submits sign-on request with authentication credentials
204
EPCS
58
Banking entity messages EPCS with authentication credentials of subscriber and event is logged.
206
Billing
56

Figure 11

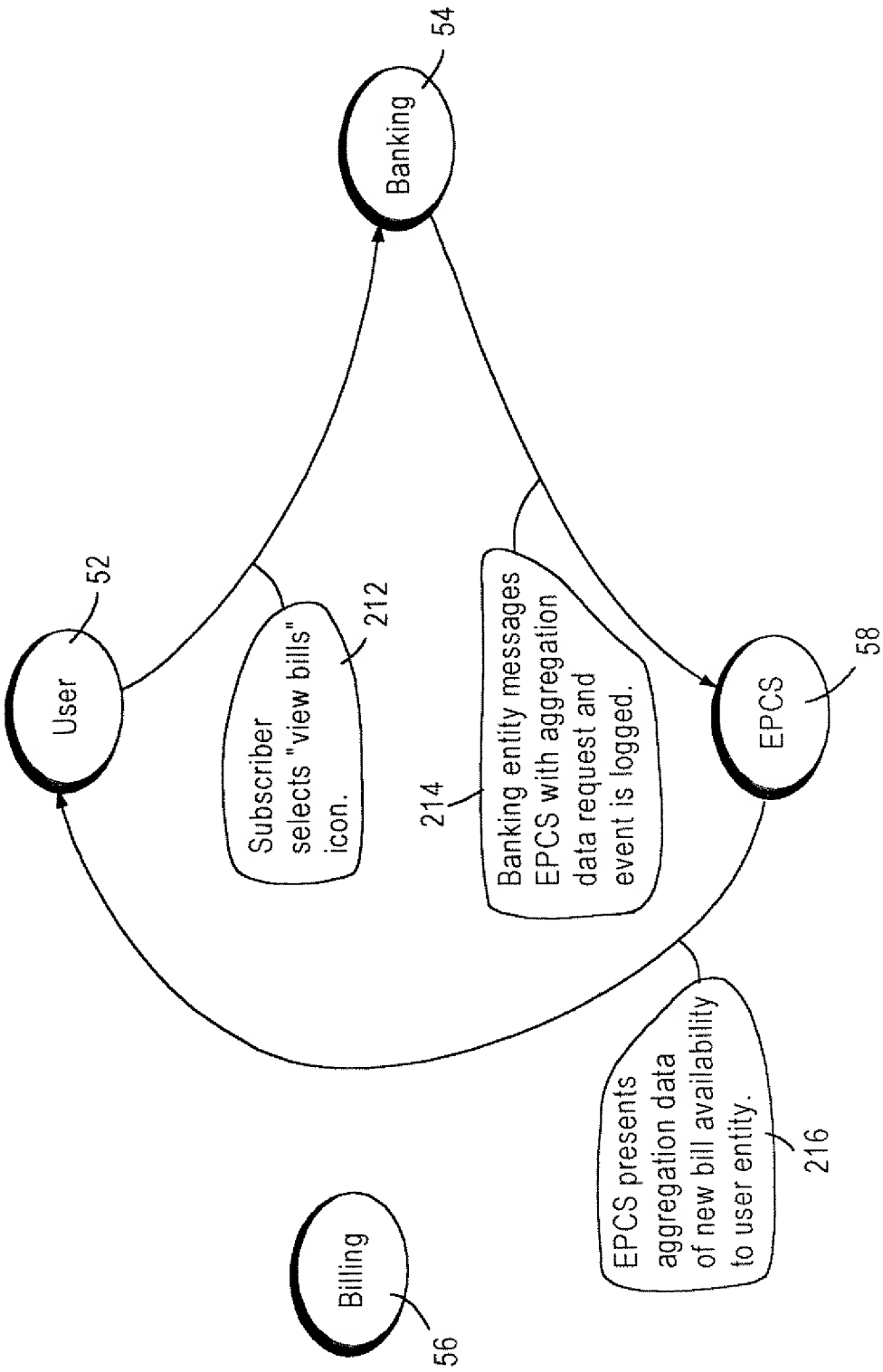
User
52
Banking
54
Billing
56
EPCS
58
Subscriber selects "view bills" icon.
212
Banking entity messages EPCS with aggregation data request and event is logged.
214
EPCS presents aggregation data of new bill availability to user entity.
216

Figure 12

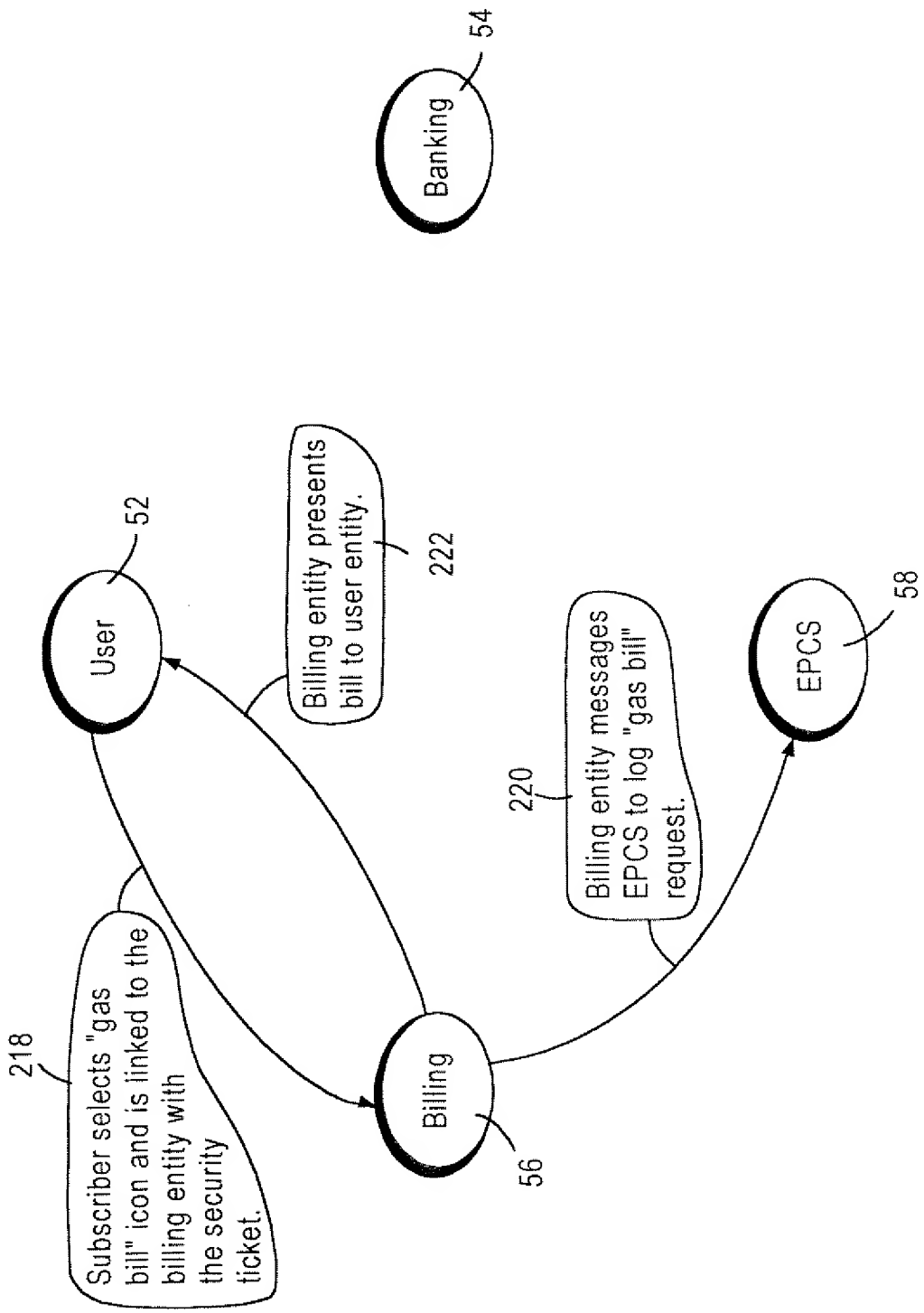
Banking
54
User
52
Billing entity presents bill to user entity.
222
Billing entity messages EPCS to log "gas bill" request.
220
EPCS
58
Subscriber selects "gas bill" icon and is linked to the billing entity with the security ticket.
218
Billing
56

Figure 13A

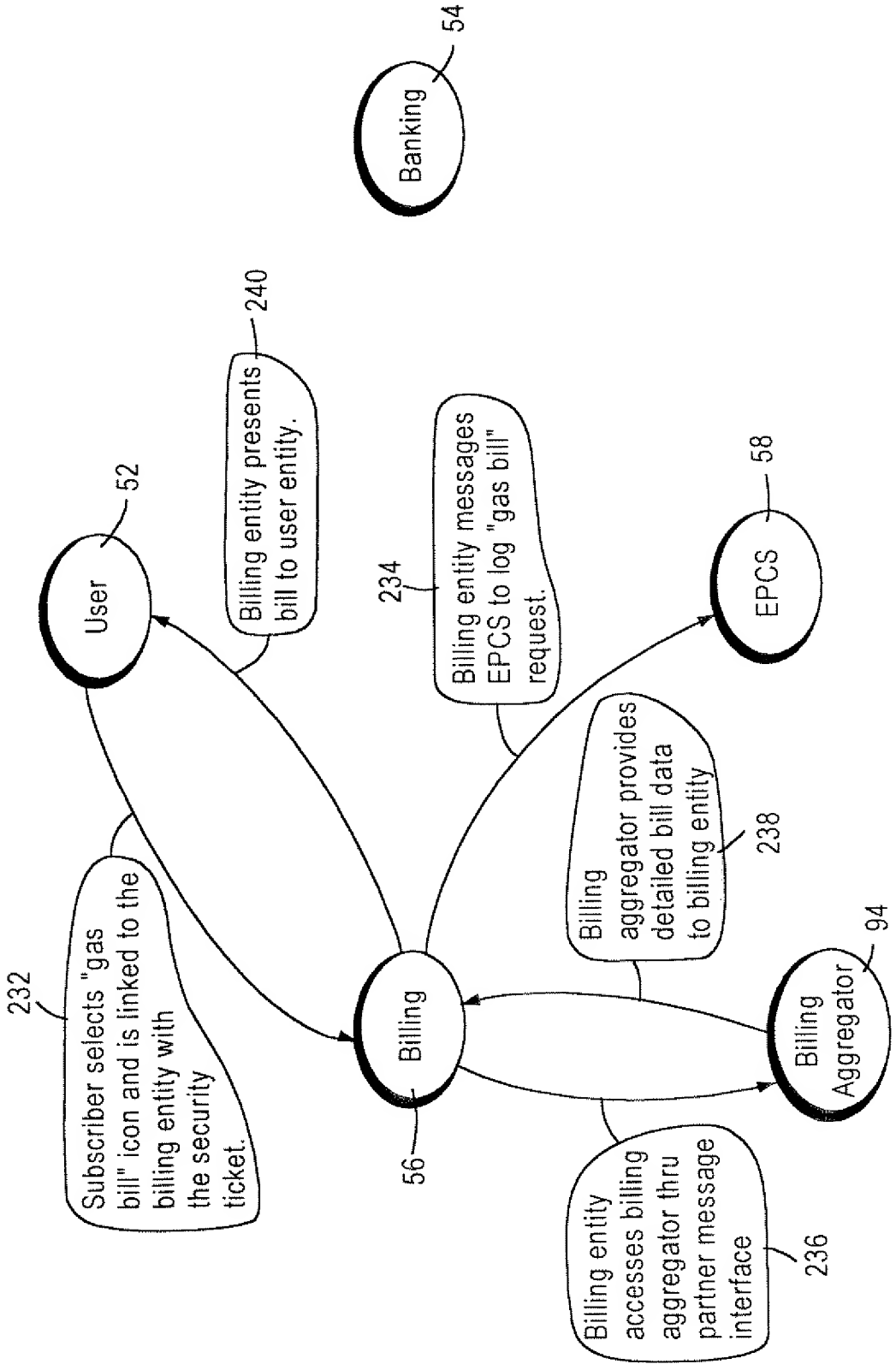
Banking
54
User
52
Billing entity presents bill to user entity.
240
Billing entity messages EPCS to log "gas bill" request.
234
EPCS
58
Billing aggregator provides detailed bill data to billing entity
238
Subscriber selects "gas bill" icon and is linked to the billing entity with the security ticket.
232
Billing
56
Billing Aggregator
94
Billing entity accesses billing aggregator thru partner message interface
236

Figure 13B

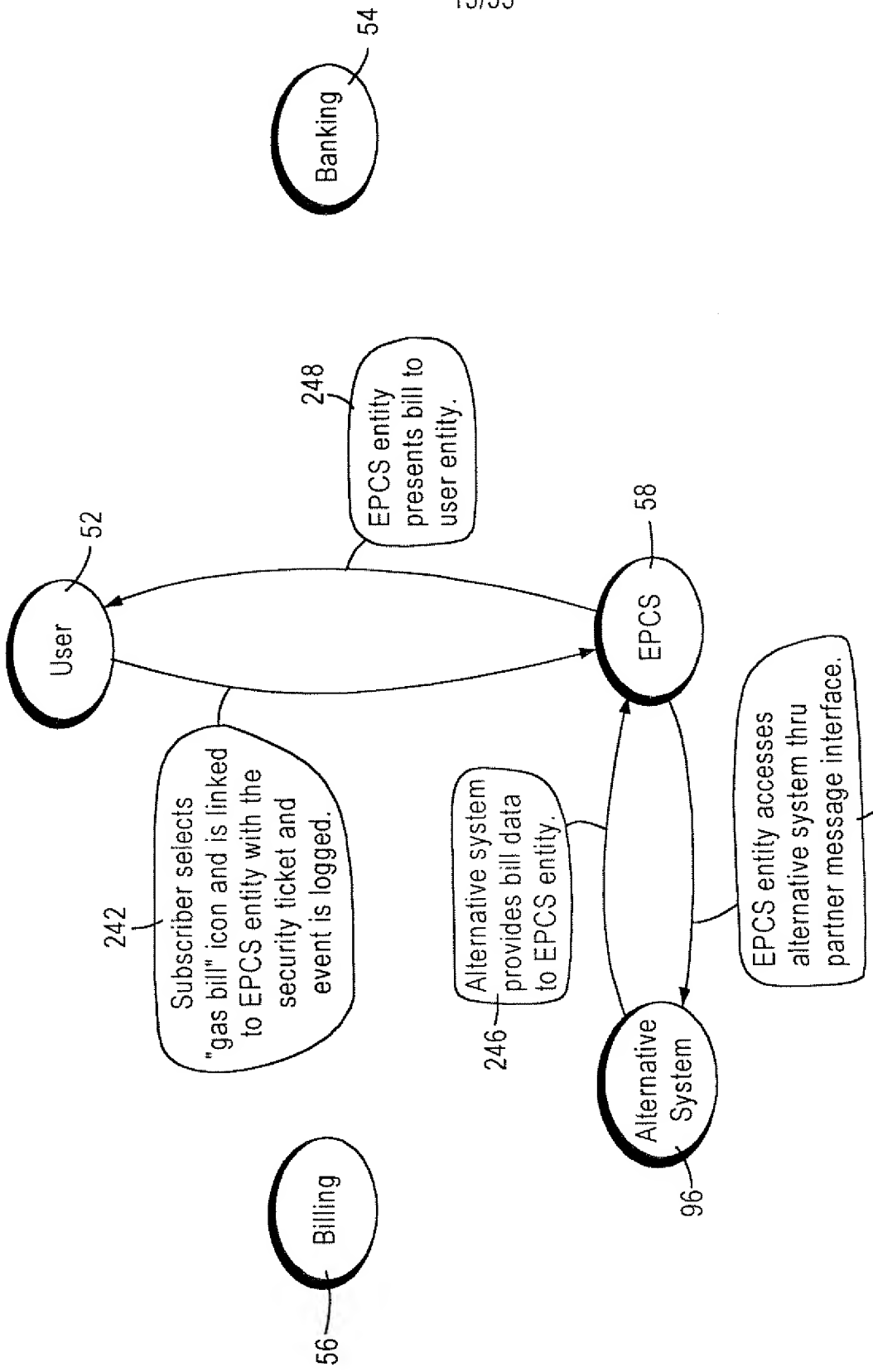
Banking
54
248
EPCS entity presents bill to user entity.
User
52
EPCS
58
Subscriber selects "gas bill" icon and is linked to EPCS entity with the security ticket and event is logged.
242
Alternative system provides bill data to EPCS entity.
246
EPCS entity accesses alternative system thru partner message interface.
244
Alternative System
96
Billing
56

Figure 13C

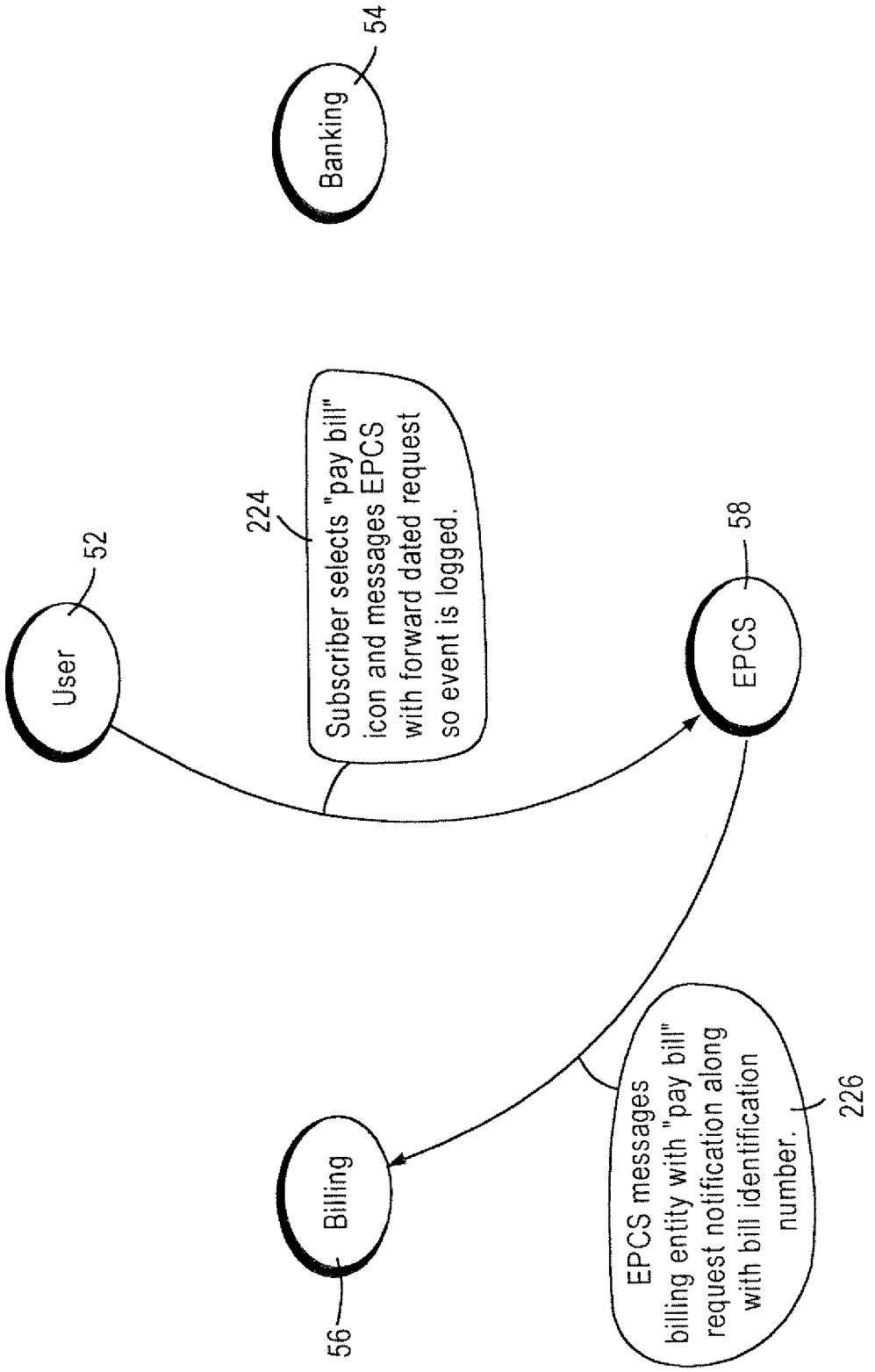
Banking
54
User
52
224
Subscriber selects "pay bill" icon and messages EPCS with forward dated request so event is logged.
EPCS
58
Billing
56
EPCS messages billing entity with "pay bill" request notification along with bill identification number.
226

Figure 14

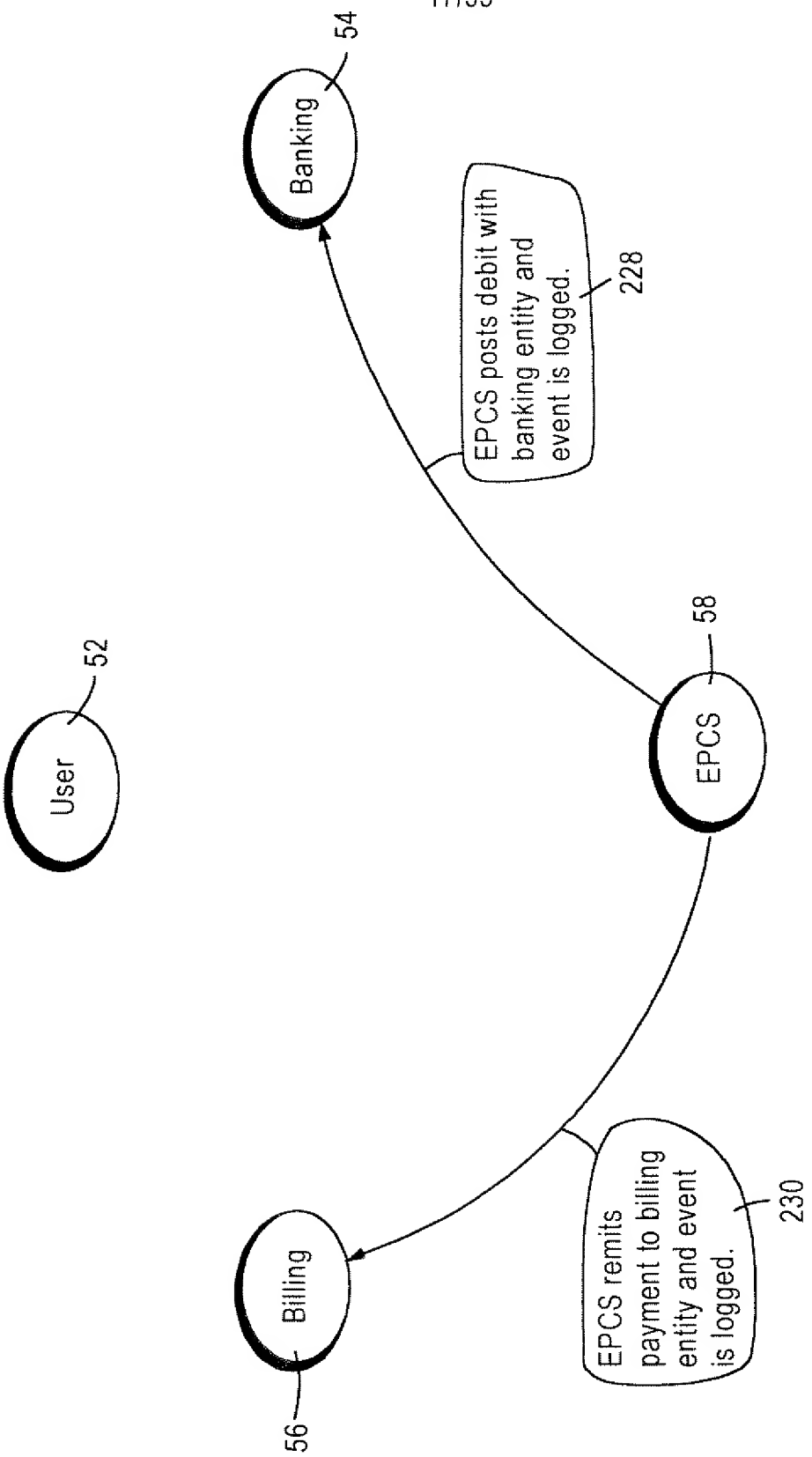
User
52
Banking
54
EPCS
58
Billing
56
EPCS posts debit with banking entity and event is logged.
228
EPCS remits payment to billing entity and event is logged.
230

Figure 15

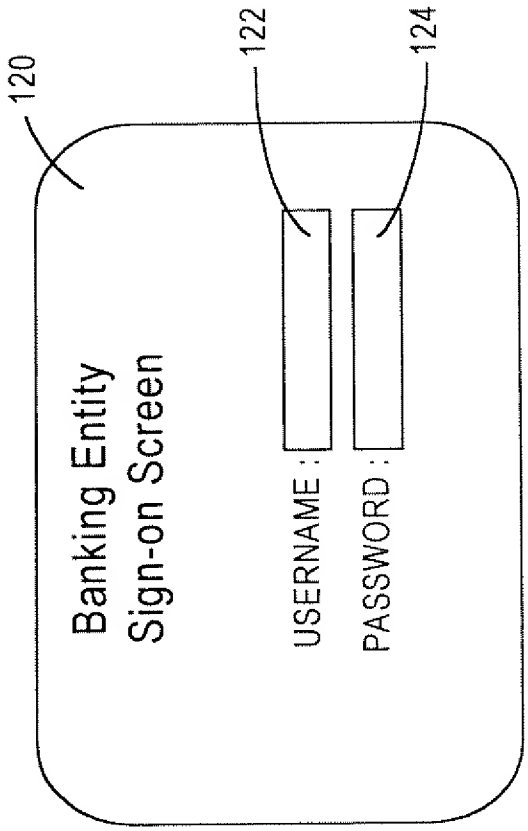
120
122
124
Banking Entity
Sign-on Screen
USERNAME :
PASSWORD :

Figure 16

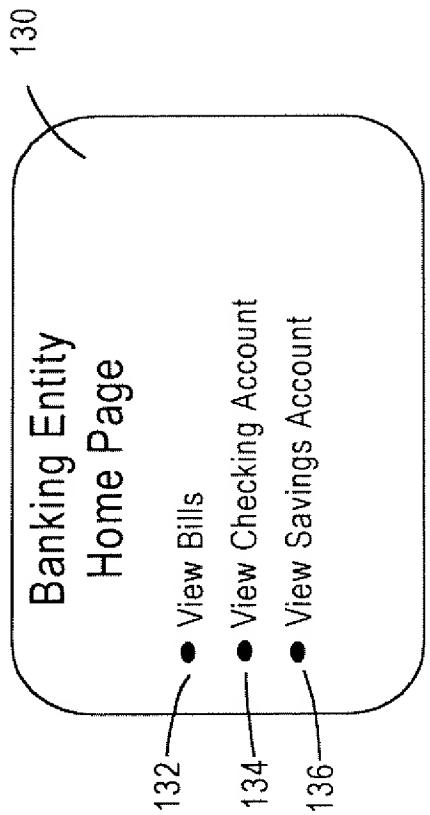
130
Banking Entity
Home Page
View Bills
View Checking Account
View Savings Account
132
134
136

Figure 17

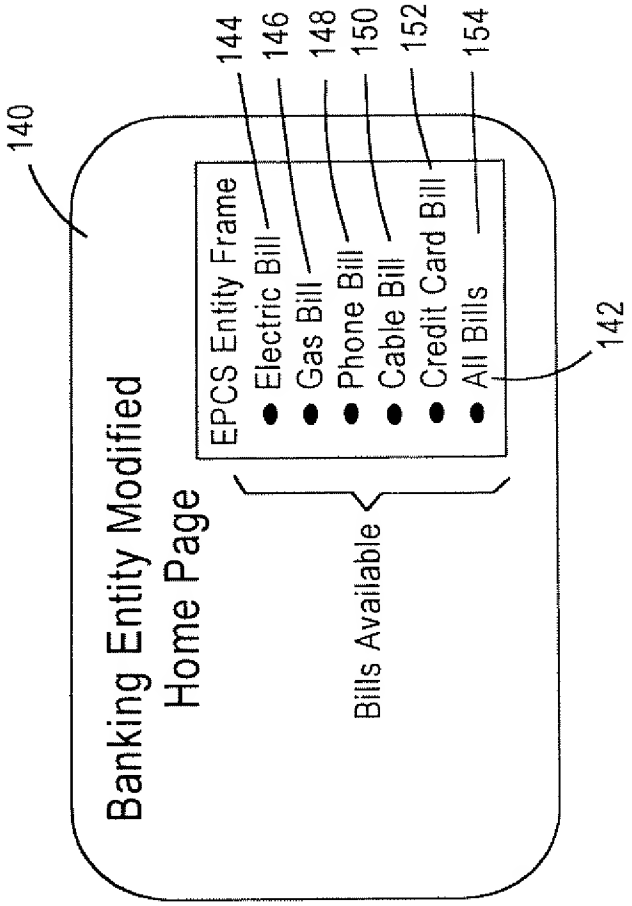
140
Banking Entity Modified Home Page
Bills Available
EPCS Entity Frame
Electric Bill
Gas Bill
Phone Bill
Cable Bill
Credit Card Bill
All Bills
144
146
148
150
152
154
142

Figure 18

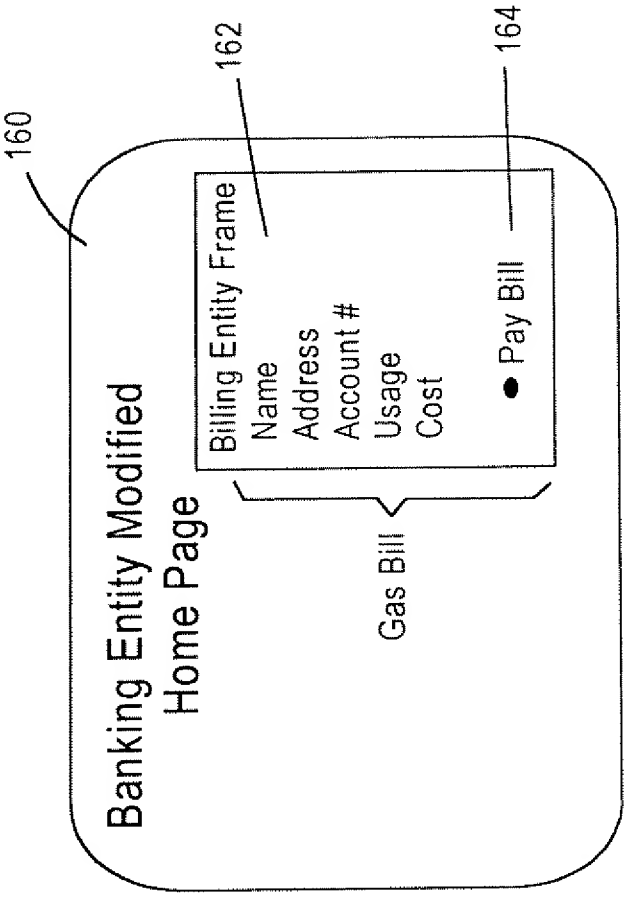
160
162
164
Banking Entity Modified Home Page
Billing Entity Frame
Name
Address
Account #
Usage
Cost
Pay Bill
Gas Bill

Figure 19

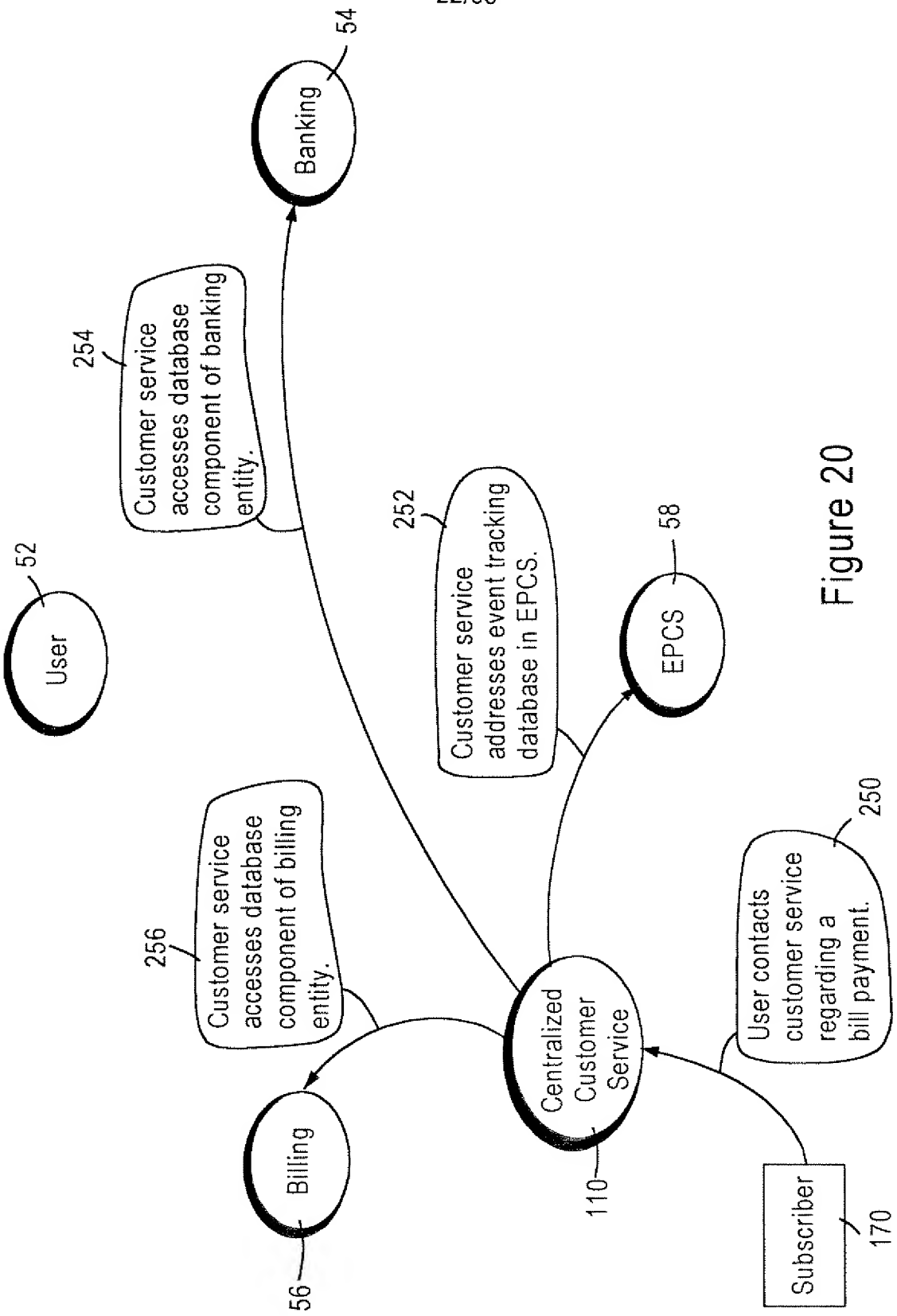
Banking
54
Customer service accesses database component of banking entity.
254
User
52
Customer service addresses event tracking database in EPCS.
252
EPCS
58
Customer service accesses database component of billing entity.
256
Billing
56
Centralized Customer Service
110
User contacts customer service regarding a bill payment.
250
Subscriber
170

Figure 20

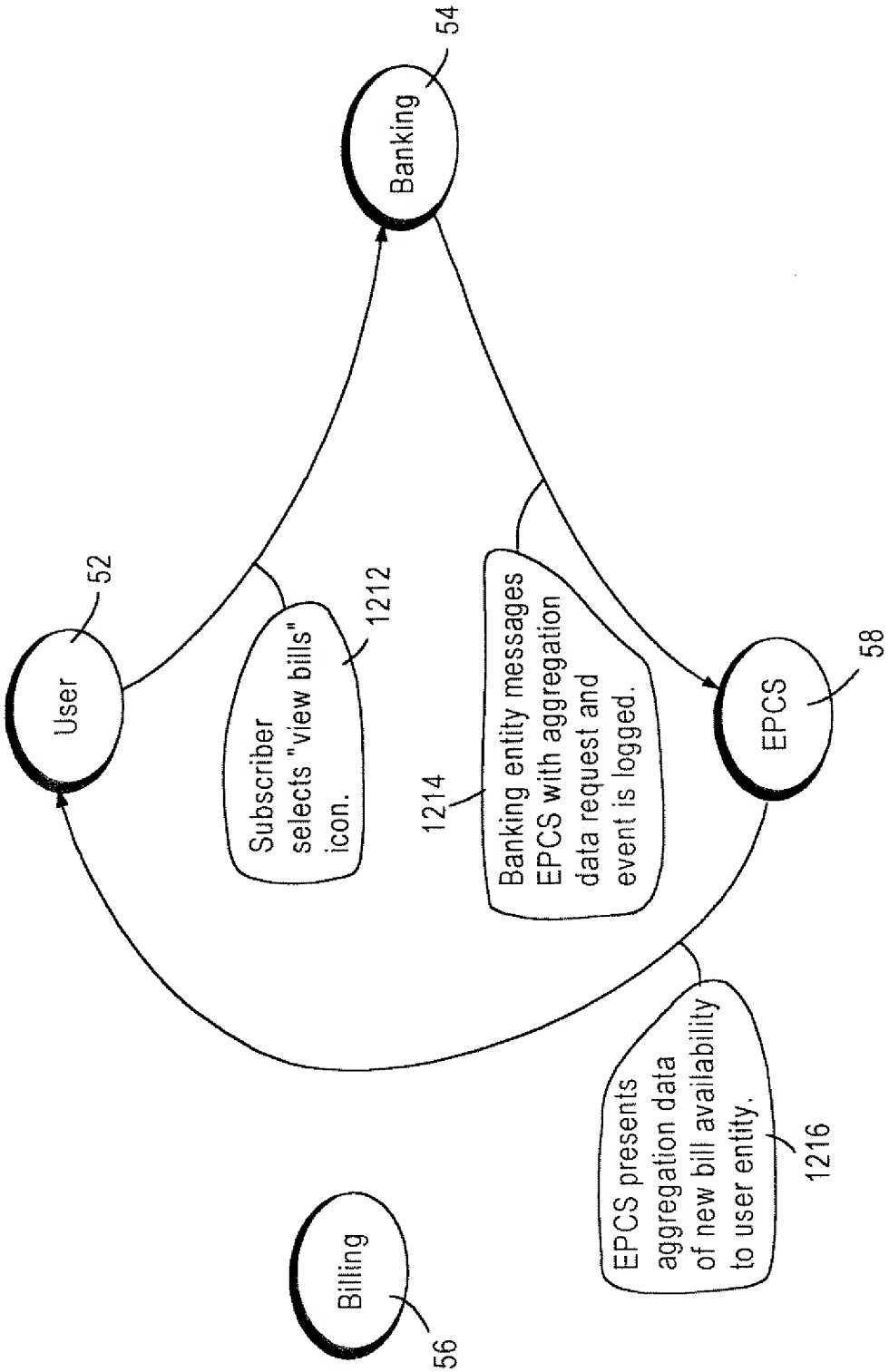
Banking
54
User
52
Subscriber selects "view bills" icon.
1212
Banking entity messages EPCS with aggregation data request and event is logged.
1214
EPCS
58
EPCS presents aggregation data of new bill availability to user entity.
1216
Billing
56

Figure 21

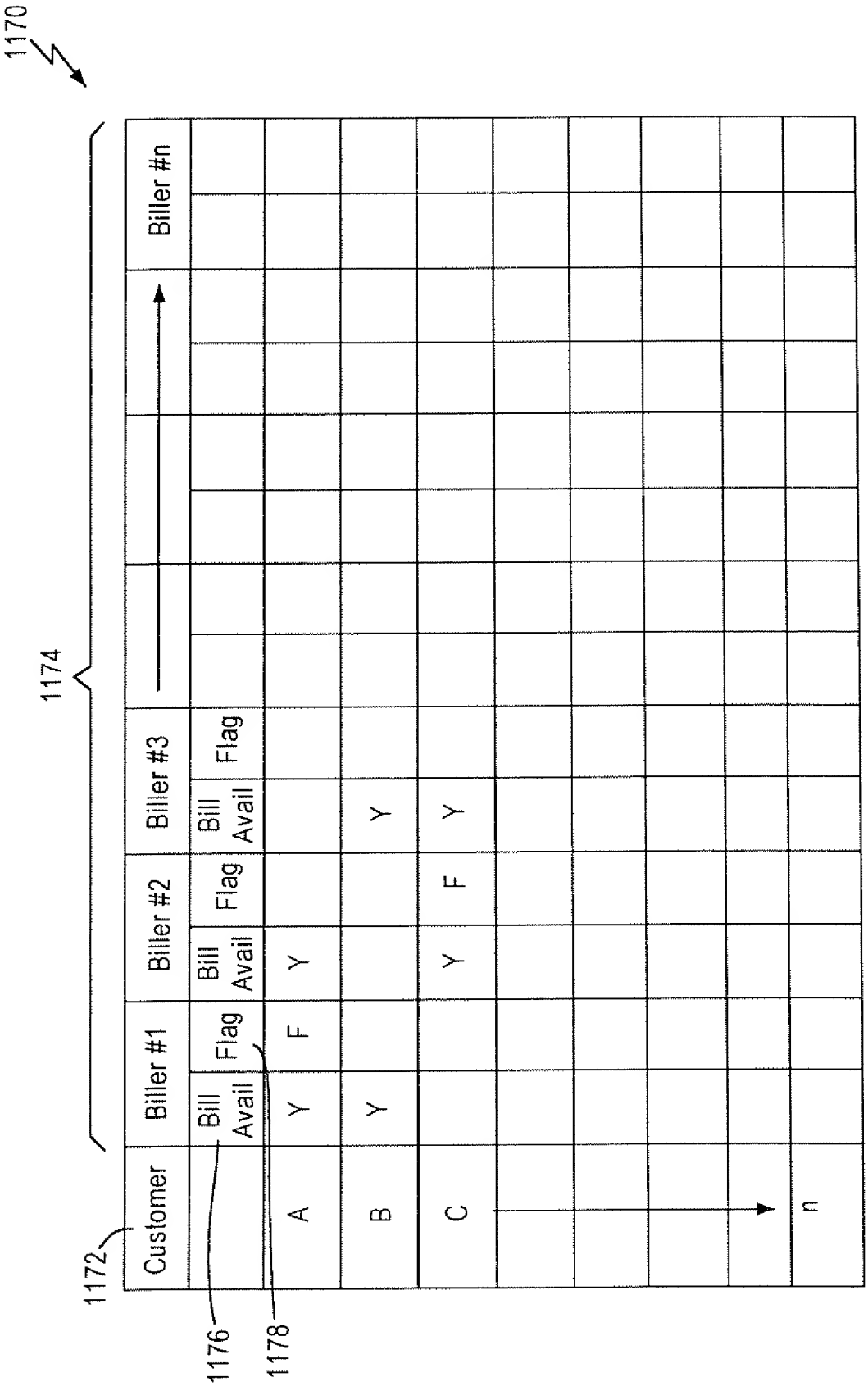
1170
1174
1172
1176
1178
Customer
Biller #1
Bill Avail
Flag
Biller #2
Bill Avail
Flag
Biller #3
Bill Avail
Flag
Biller #n
A
Y
F
Y
Y
B
Y
Y
C
Y
F
Y
n

Figure 22A

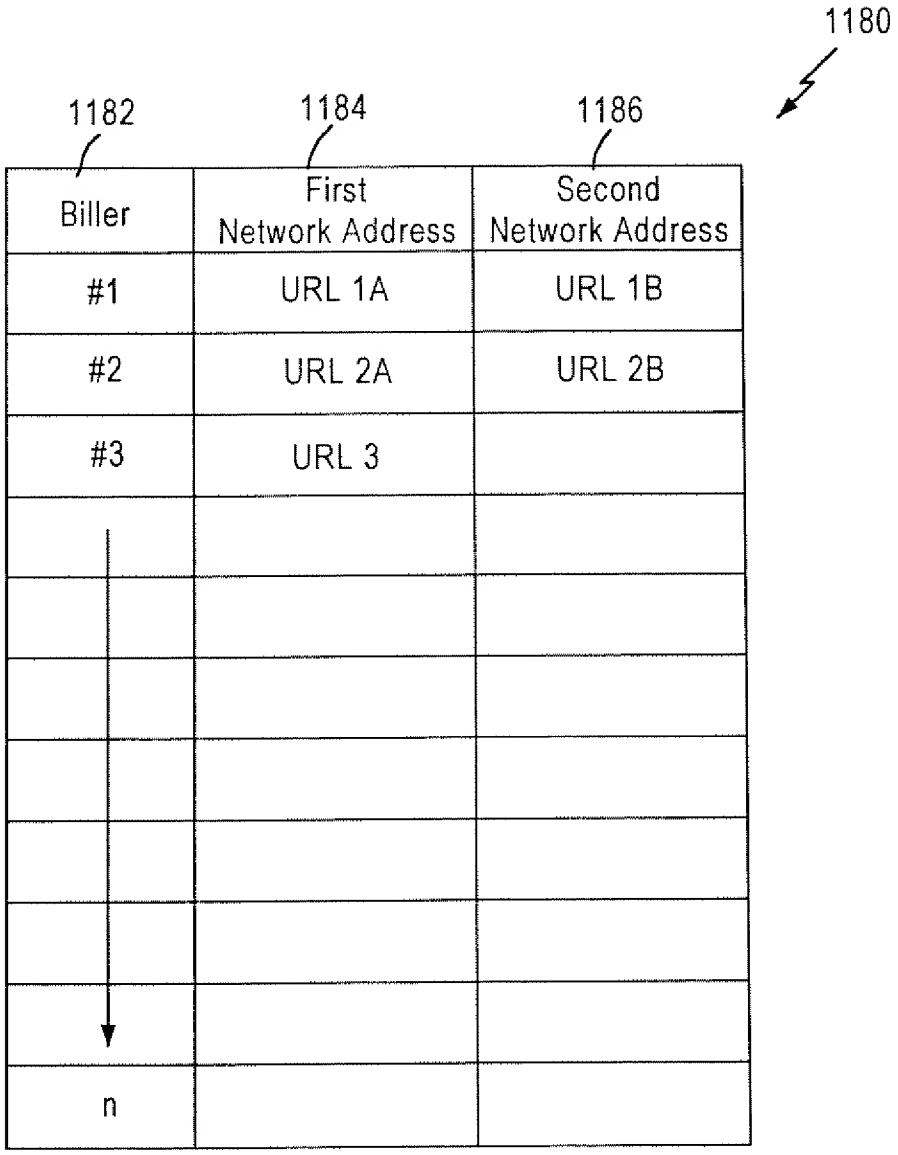
1180
1182
1184
1186
Biller
First Network Address
Second Network Address
#1
URL 1A
URL 1B
#2
URL 2A
URL 2B
#3
URL 3
n

Figure 22B

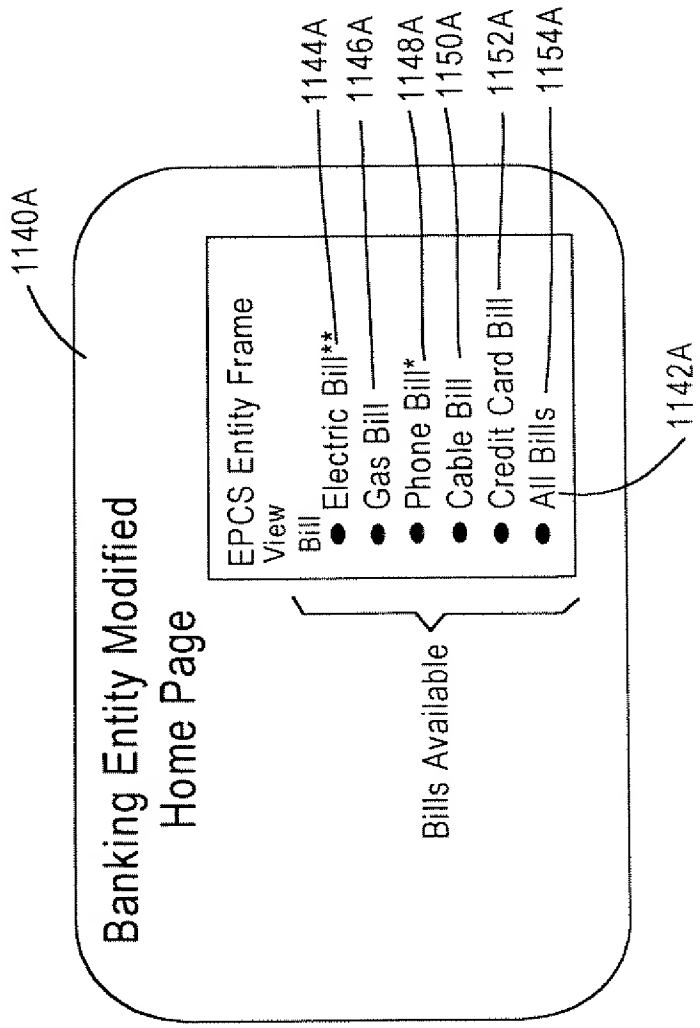
1140A
Banking Entity Modified Home Page
EPCS Entity Frame
View Bill
Bills Available
Electric Bill**
Gas Bill
Phone Bill*
Cable Bill
Credit Card Bill
All Bills
1144A
1146A
1148A
1150A
1152A
1154A
1142A

Figure 23A

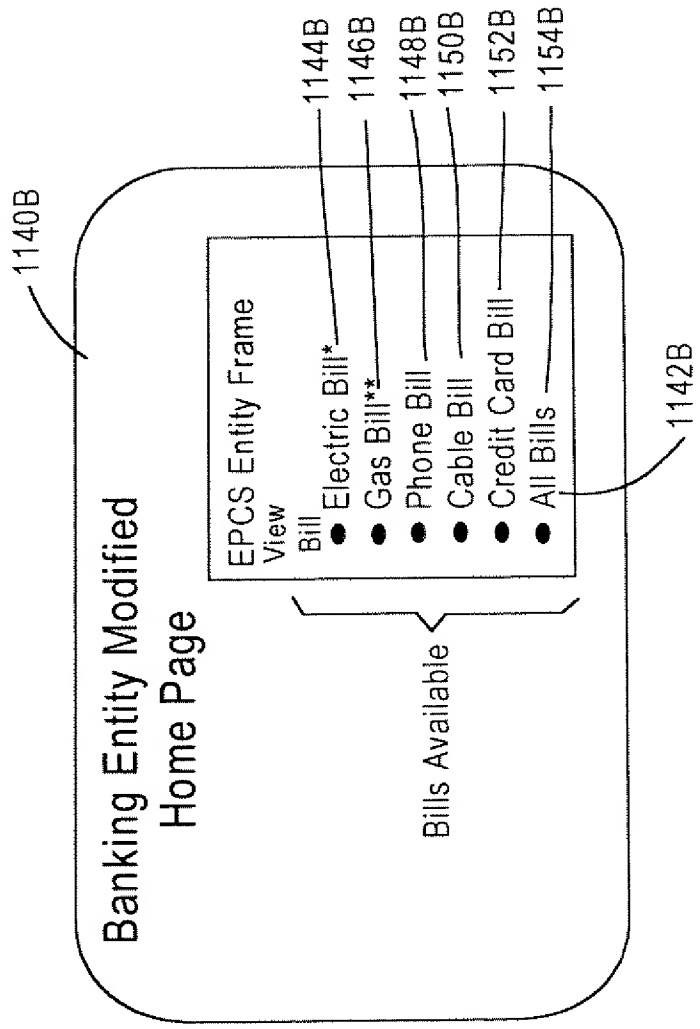
1140B
Banking Entity Modified Home Page
EPCS Entity Frame
View Bill
Electric Bill*
Gas Bill**
Phone Bill
Cable Bill
Credit Card Bill
All Bills
1144B
1146B
1148B
1150B
1152B
1154B
1142B
Bills Available

Figure 23B

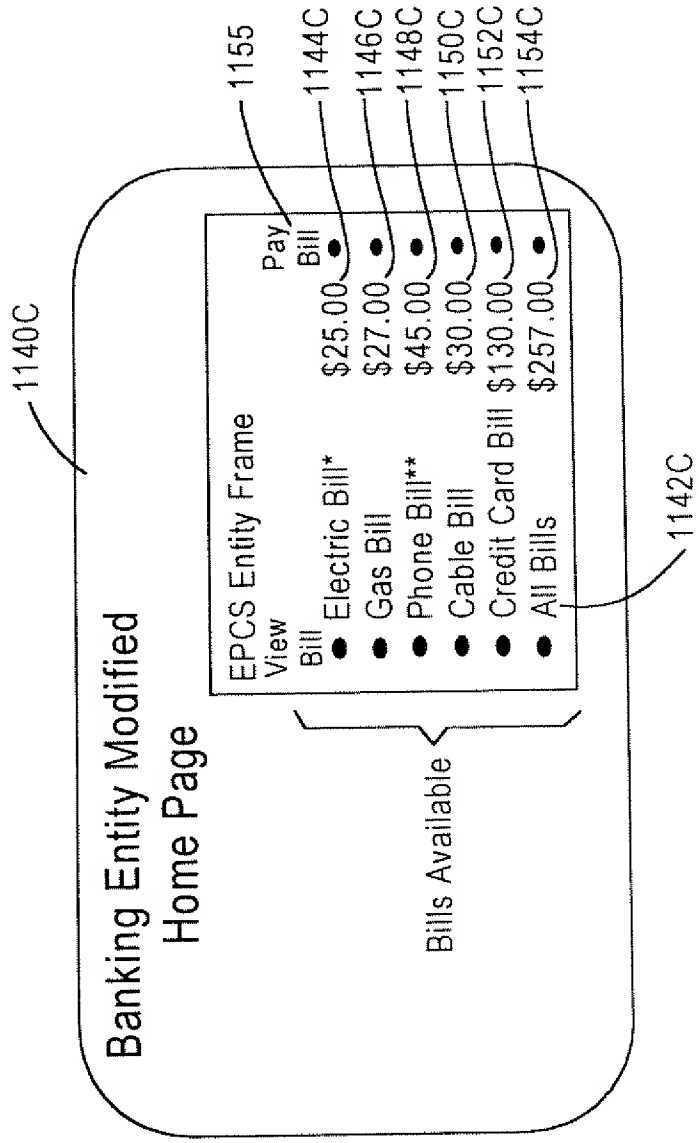
1140C
Banking Entity Modified Home Page
EPCS Entity Frame
View Bill
Pay Bill
Electric Bill*
Gas Bill
Phone Bill**
Cable Bill
Credit Card Bill
All Bills
$25.00
$27.00
$45.00
$30.00
$130.00
$257.00
Bills Available
1155
1144C
1146C
1148C
1150C
1152C
1154C
1142C

Figure 23C

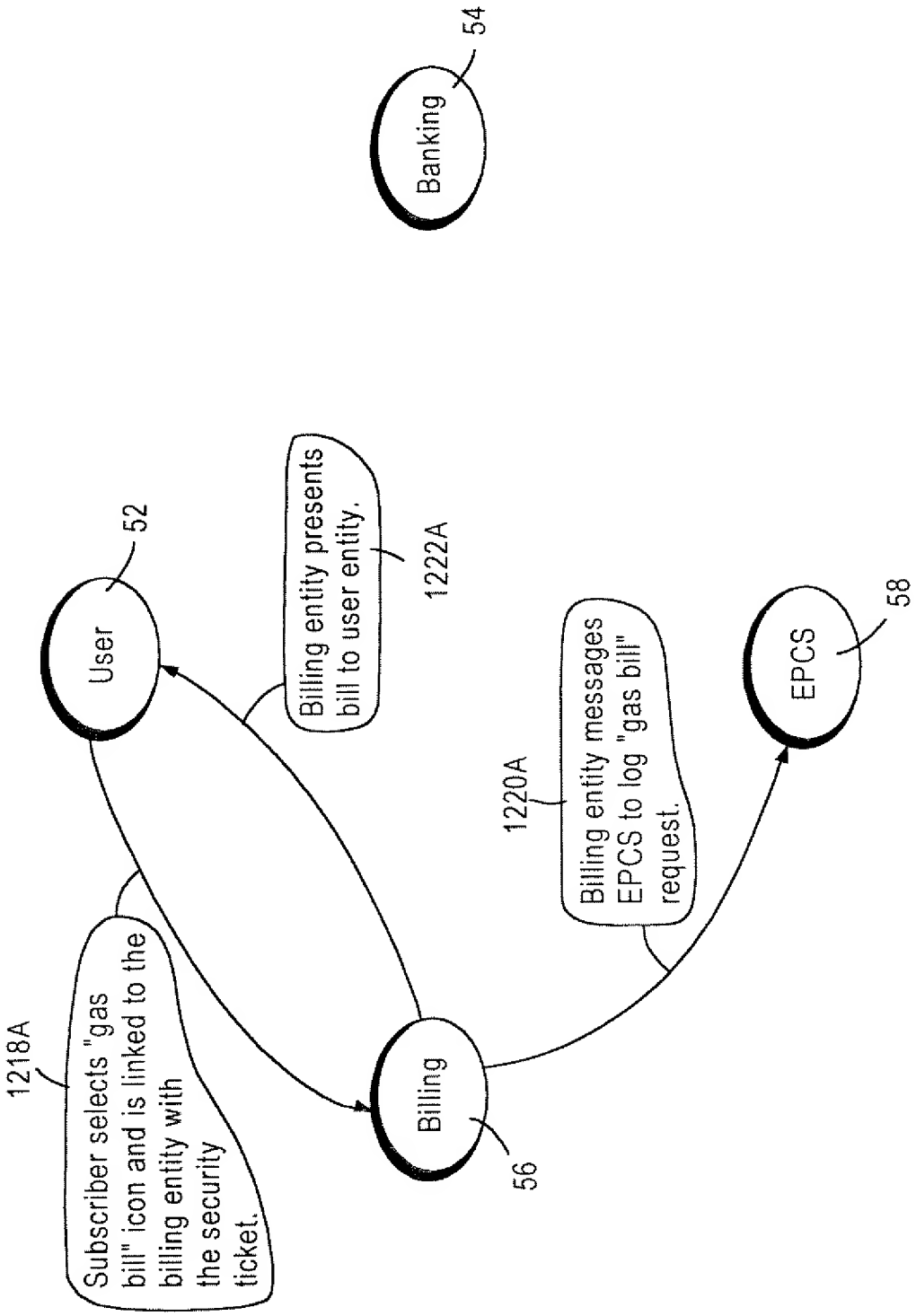
Banking
54
User
52
Billing entity presents bill to user entity.
1222A
Billing entity messages EPCS to log "gas bill" request.
1220A
EPCS
58
Subscriber selects "gas bill" icon and is linked to the billing entity with the security ticket.
1218A
Billing
56

Figure 24A

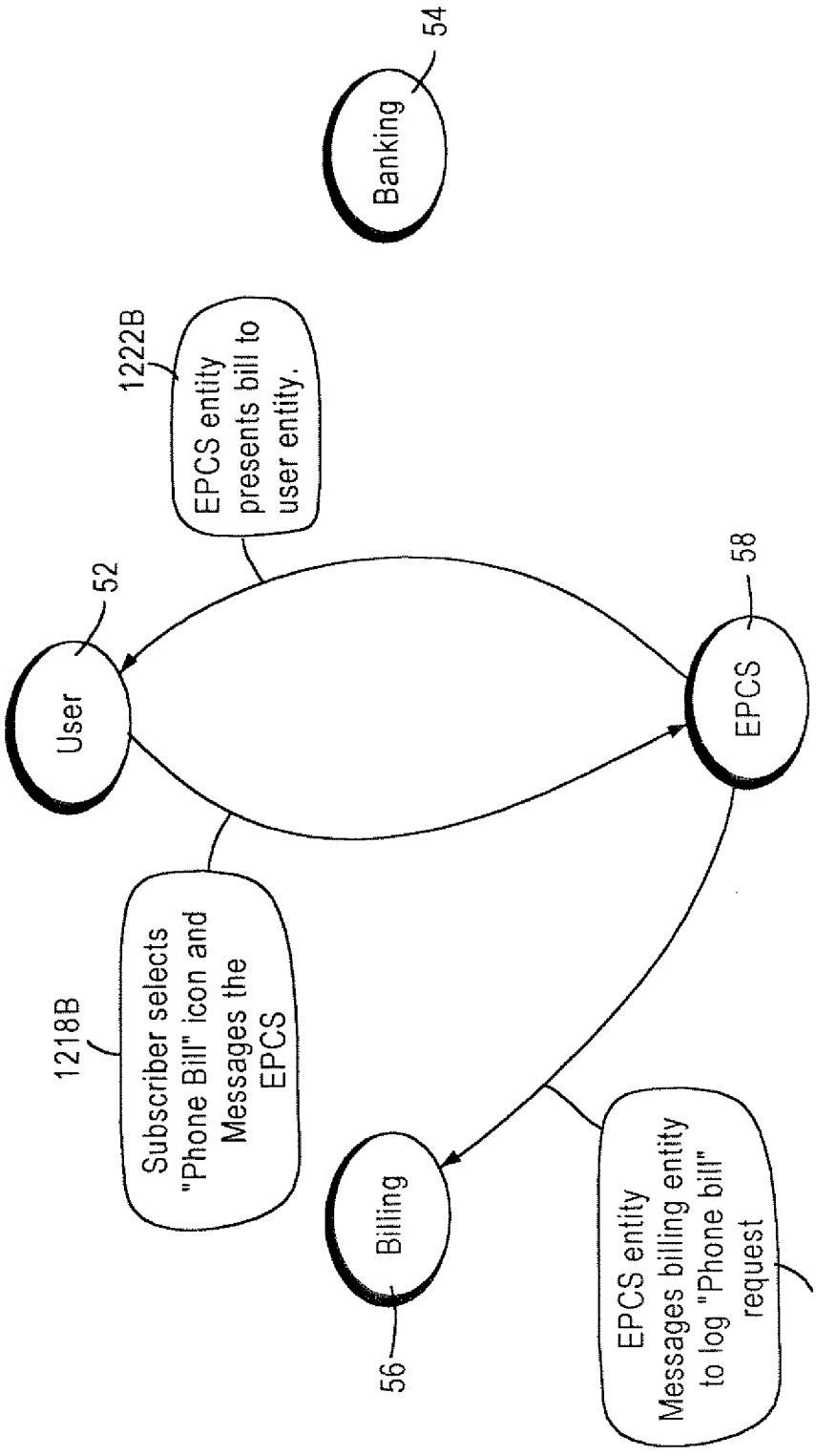
Banking
54
1222B
EPCS entity presents bill to user entity.
User
52
EPCS
58
1218B
Subscriber selects "Phone Bill" icon and Messages the EPCS
Billing
56
EPCS entity Messages billing entity to log "Phone bill" request
1220B

Figure 24B

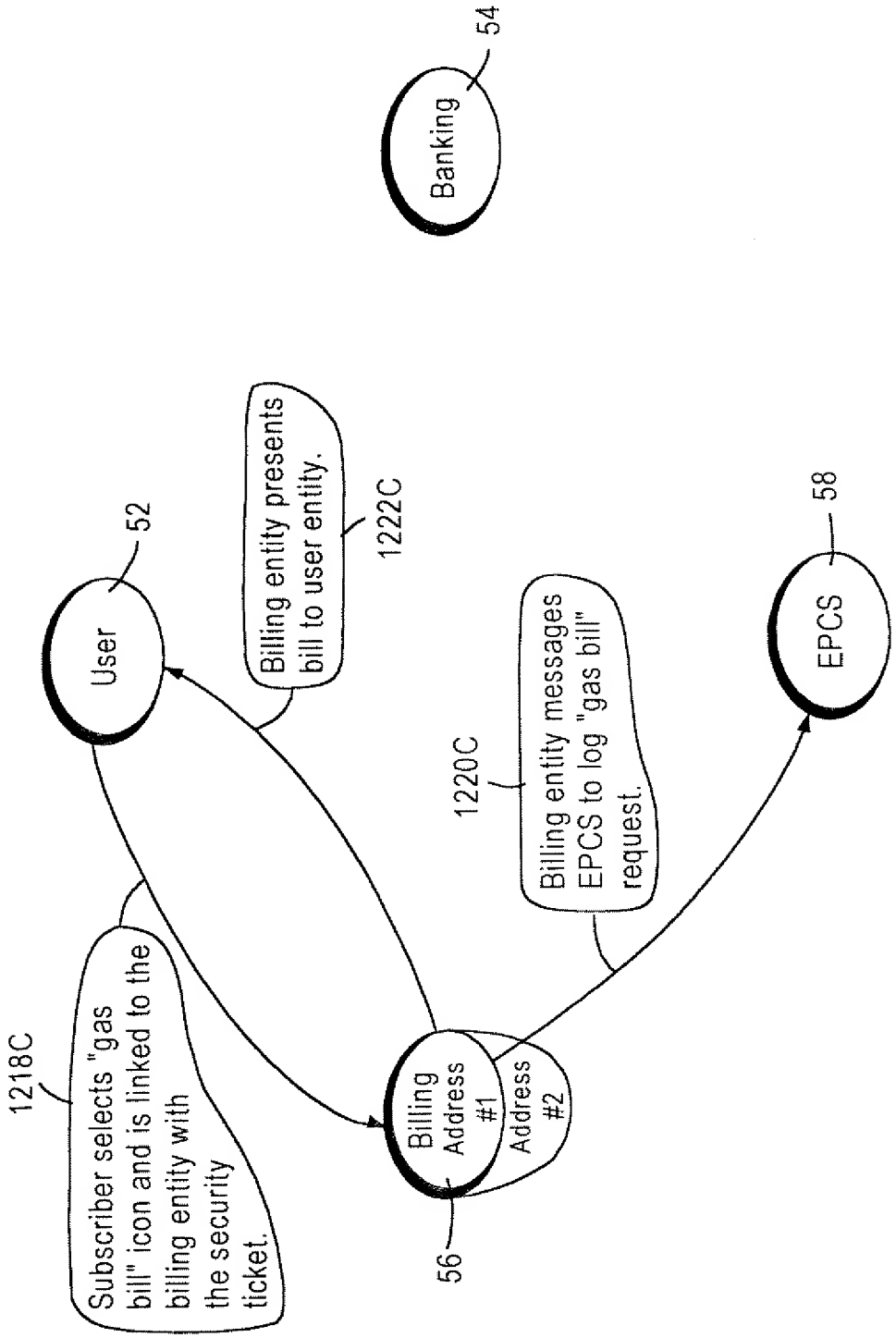
Banking
54
User
52
Billing entity presents bill to user entity.
1222C
Billing entity messages EPCS to log "gas bill" request.
1220C
EPCS
58
Subscriber selects "gas bill" icon and is linked to the billing entity with the security ticket.
1218C
Billing Address #1
Address #2
56

Figure 24C

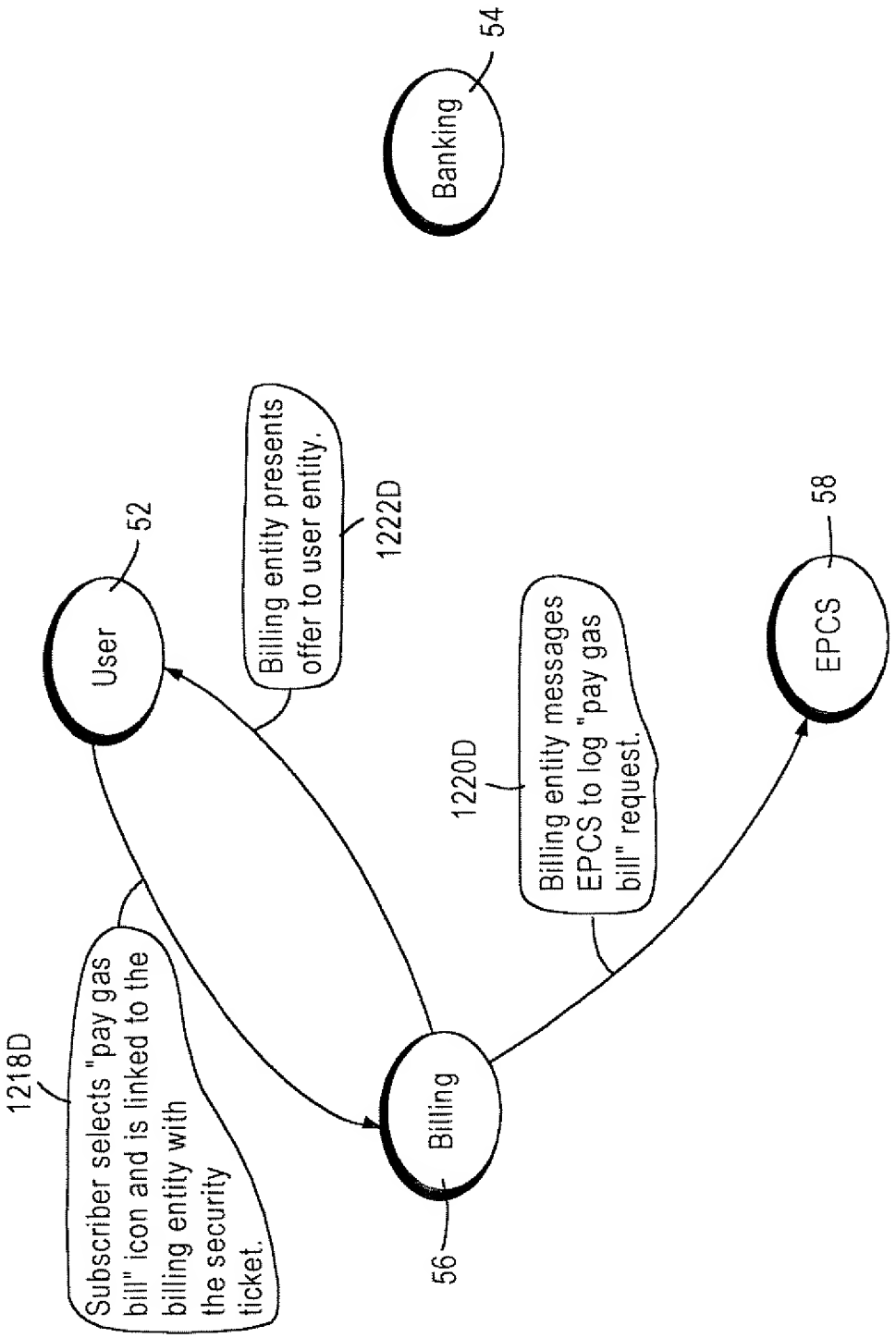
Banking
54
User
52
Billing entity presents offer to user entity.
1222D
1220D
Billing entity messages EPCS to log "pay gas bill" request.
EPCS
58
1218D
Subscriber selects "pay gas bill" icon and is linked to the billing entity with the security ticket.
Billing
56

Figure 24D

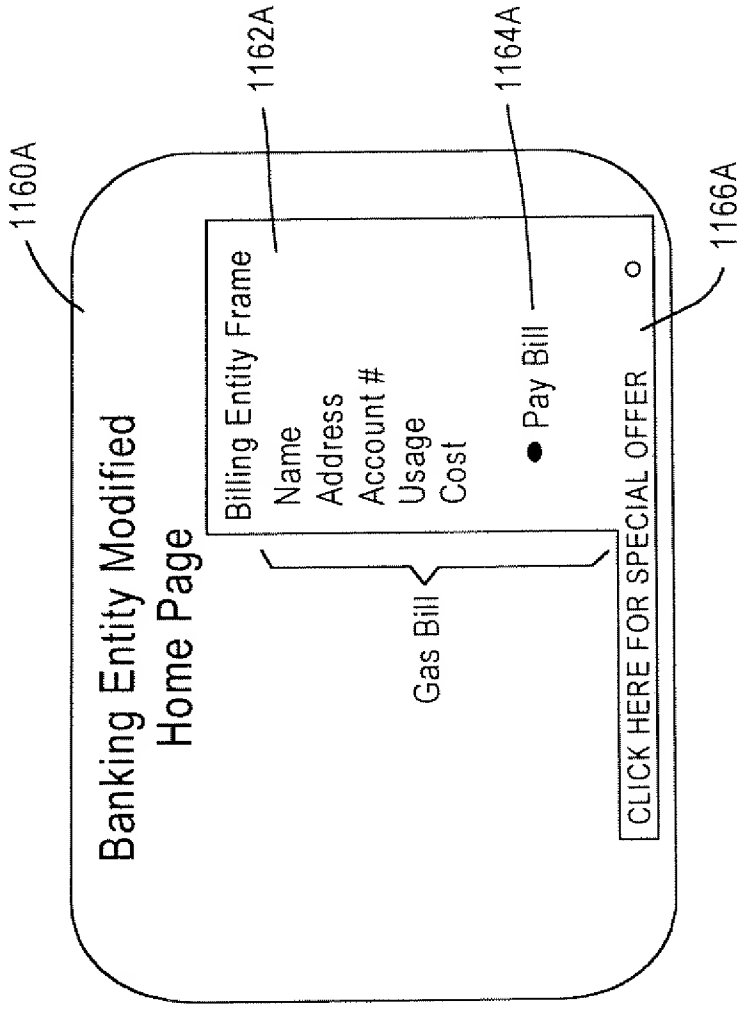
1160A
1162A
1164A
1166A
Banking Entity Modified Home Page
Billing Entity Frame
Name
Address
Account #
Usage
Cost
Pay Bill
Gas Bill
CLICK HERE FOR SPECIAL OFFER

Figure 25A

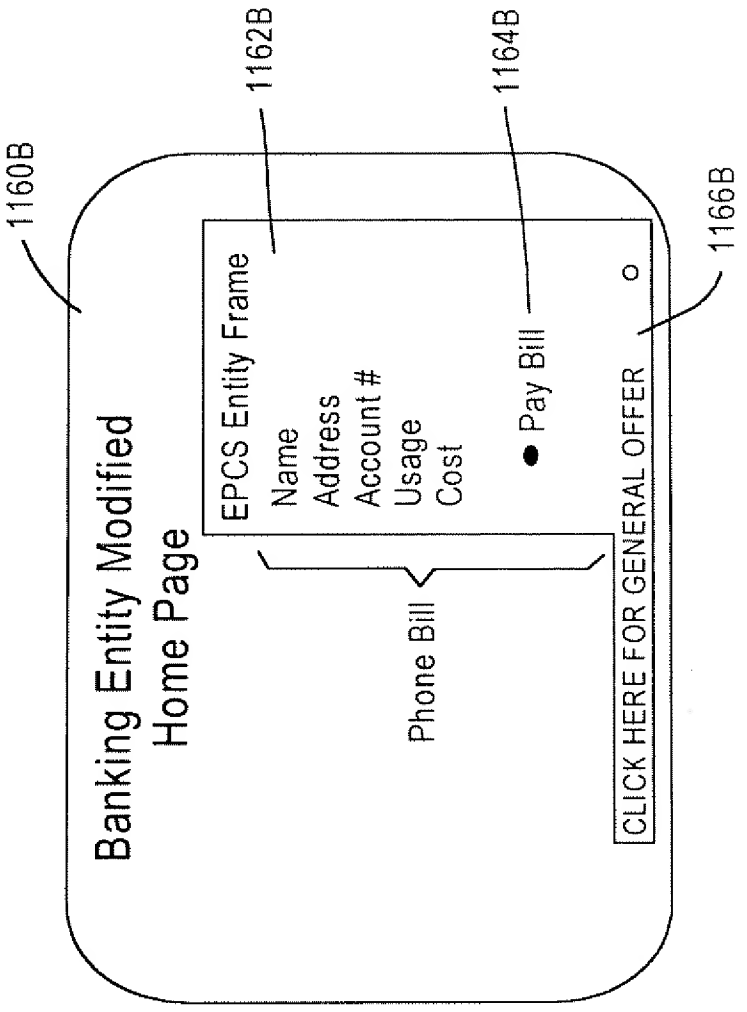
1160B
1162B
1164B
1166B
Banking Entity Modified Home Page
EPCS Entity Frame
Name
Address
Account #
Usage
Cost
Pay Bill
CLICK HERE FOR GENERAL OFFER
Phone Bill

Figure 25B

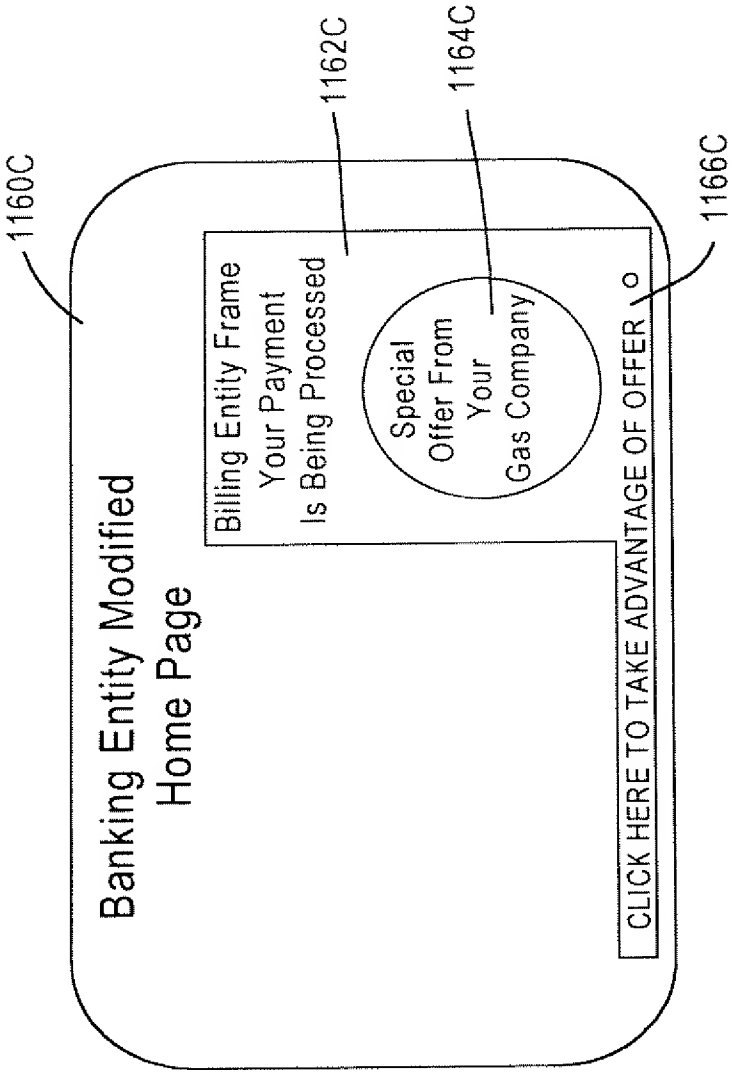
1160C
1162C
1164C
1166C
Banking Entity Modified Home Page
Billing Entity Frame Your Payment Is Being Processed
Special Offer From Your Gas Company
CLICK HERE TO TAKE ADVANTAGE OF OFFER

Figure 25C